NUODEX INC. a.k.a. TENNECO-HEYDEN DIVISION INDUSTRIAL HIGHWAY WOODBRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY EPA ID NO. NJD002184562

GENERAL INFORMATION AND SITE HISTORY

Nuodex Inc. is located on Industrial Highway and Meadow Road in the Fords section of Woodbridge Township, New Jersey. This 174-acre site occupies Block 93, Lot 100 and Block 62, Lots 2 and 3. The site is in a highly industrialized area. There are 151,500, people within 4 miles of the site. The nearest homes are 0.06 mile away. The southern half of the site is marshland area and Crows Mill Creek borders the eastern half of the property. Plant operations commenced at the site in 1926 under the name Norvel-Chemical which later became Heyden-Newport, Inc. From 1964 until 1982, Tenneco Chemicals owned the property. Nuodex acquired the facility in 1982 and was subsequently bought out by Huls-America, the current owner, in 1985.

Until 1985, the plant was used for chemical manufacturing. Prior to 1960, the following products were manufactured on site: amicral, anisic acid, anisoyl chloride, benzil, benzilic acids, benzoic anhydride, and benzoin. Products discontinued between 1961 and 1970 included: adipic acid, aktivins, benzaldehyde, formic acid, glycerol phosphates, pentaerythritol, phthalic anhydride, salicylaldehyde, sodium formate, tolyl aldehyde, and calcium salts. Until the late 1970s, dichlorobenzaldehydes, dichlorobenzoic acids, benzotrifluorides, benzotrichlorides, dichlorobenzoyl chlorides, dichlorobenzyl chlorides, creosotes, herbicide HC-1281, hydrochloric acid, dichlorotoluenes, toxaphene, and supercryl were manufactured. At the time of cessation of operations at the facility, Nuodex was manufacturing formaldehyde and the tradename products, Guaiacol "C" Anti-Skin Agents and Nuosept 95 Preservatives. The termination of formaldehyde manufacturing triggered the ECRA review. The facility was closed February 25, 1985.

Extensive groundwater and soil sampling by Nuodex in accordance with ECRA has revealed the presence of various contaminants on site. Results of these sampling episodes are discussed below. The site is currently undergoing plans for cleanup and removal of wastes.

SITE OPERATIONS OF CONCERN

Products manufactured while the site was active were previously listed. Various raw materials, used to formulate products by their respective processes, included trichlorotoluene, crude toluene, crude benzoic acid, phosphorus oxychloride, phosphorus trichloride, camphene, dichlorotoluene, o-cresol, guaiacol crystals, phenol, 2-ethyl hexanol, methyl methacrylate, and benzene.

Several storage areas on site contained hazardous wastes while the facility was operating. Underground storage tanks held fuel oil and gasoline while aboveground tanks contained formaldehyde, caustic soda, and ammonia. In 1985, materials were pumped out of the tanks and the tanks cleaned. The underground storage tanks were removed in that same year.

Two surface impoundments built in 1957 were used as settling ponds (lagoons) until 1971. During that period, the lagoons received treated effluent wastewater that was subsequently discharged to the Middlesex County Utilities Authority (MCUA). From 1974 to 1983 wastewater flowed across the first lagoon directly into the MCUA system. A pipeline connecting the effluent discharge point to the MCUA was completed in January 1983. Wastewater has not entered the lagoon since. Sludge was last removed from the lagoons in 1973.

Documentation indicates that there are three landfills onsite. The largest is 12 acres and the other two approximately 1 acre each. The large landfill, located south of the lagoons, was used for the disposal of sludge from the settling lagoons when they were full. This practice ceased in 1973. In the landfill on the north end of Middle Lake, near Industrial Highway, drums and wastes were visible at various locations within the landfill during a Princeton Aqua Sciences metal detection survey. The landfill south of the Maleic plant was observed to be littered with subsurface ferrous metals.

The fourth storage area is a drum storage area in Building No. 60. The building construction consists of a 6-inch reinforced concrete slab resting on concrete pillars, and is elevated 4 to 5 feet above the ground surface. There are no floor drains in the building. A transfer room on the east side of the building was used to pump finished product, via aboveground piping, from nearby storage tanks into drums to await shipment. Storage of the drums was permitted by a RCRA Permit to exceed 90 days.

Some of the buildings used for production on site had their own spillage containment systems. Examples of containment systems included: troughs which directed spills to the plant sewage system, catch basins and earthen berms around raw material storage tanks, concrete pads, floor drains which led to the sewage system, dikes, and sumps.

During inspections by the NJDEP, various spills and leakages were noted on site. Leakage on the ground outside the concrete dike surrounding a benzene tank was noted during a February 28, 1979 inspection. On December 3, 1984 a release to the atmosphere of 10 pounds of phosphorus oxychloride was reported by Nuodex. Evacuation of employees from Nuodex and a neighboring facility was required. No injuries were reported and the vapor cloud dispersed within minutes. A July 16, 1985 inspection of the site revealed two areas where vegetation was not present. One was between two of the landfills and the other between Building No. 12 and two salt tanks. Also observed during the inspection were transformers and a 10 by 25 foot oil stained area. No other spills or releases have been documented.

On July 15, 1984, Nuodex was issued NJPDES Permit No. 0000116 to undergo a comprehensive groundwater monitoring program and to submit a closure plan for the two lagoons on site. The permit expires July 14, 1989. A second NJPDES Permit for the discharge of stormwater runoff to Black Ditch and Slingtail Creek was issued March 7, 1985 and expires July 14, 1989. The former permit was revised March 14, 1986. This permit required the facility to close the lagoons. The facility is not evaluated for groundwater during NJDEP Compliance Evaluation Inspections since they are undergoing ECRA closure. During a June 3, 1988 Compliance Evaluation Inspection, Nuodex received an unacceptable rating for high suspended

solids, low pH, and for not meeting the toxicity limitation in their suface water discharge. No other unacceptable ratings were documented.

GROUNDWATER ROUTE

In the upper 30 to 40 feet of the geologic section, two groundwater flow systems have been identified. The first is a water table zone consisting of interbedded fill, sand, loam, and clay. This zone, ranging from 5 to 15 feet thick, is separated from a shallow artesian zone by a 1 to 5 foot thick layer of clay or peat. Both zones are within the Farrington Sand which thickens from north to south and is estimated to be 40 to 75 feet thick depending on the location. Underlying the Farrington Sand is 20 to 30 feet of Raritan Fire Clay. Below these unconsolidated deposits is the Brunswick Formation consisting of interbedded layers of highly fractured red shale, sandstone, and siltstone.

There are 36 monitoring wells on site. Extensive sampling of these wells has shown high levels of contamination; results are discussed below. Water is encountered in the wells at 1 to 3 feet below the ground surface. Testing of the wells has revealed that the predominant flow direction of groundwater is south, and groundwater in the Farrington Sand discharges into the Raritan River.

Edison Township has three public supply wells 4 miles northwest of the site that are only used as needed during high demand periods. Water from these wells, which draw from the Brunswick Formation, is interconnected with water from other sources that serve the township. Approximately 82,000 people are served by the Edison Township Water Department. Although groundwater flow is in the opposite direction of the Edison Township wells, there is a potential for the water supply to be threatened. Across the Raritan River is a City of South Amboy public supply well. The well is 3.5 miles southeast of the site and within the Magothy-Raritan Formation. This well is joined with other water supplies to serve approximately 8,000 people. Numerous industrial supply wells are within 4 miles of the site.

Nuodex was issued a NJPDES Permit (No. 0000116) on March 7, 1985 for the discharge of stormwater runoff to Black Ditch and Slingtail Creeks. Black Ditch Creek is approximately 0.60 mile southwest of the site and Slingtail Creek is approximately 0.25 mile northeast of the site. Both creeks flow to the Raritan River. Nuodex received an unacceptable rating for high total suspended solids, low pH, and for not meeting the toxicity limitation in their surface water discharge during a June 3, 1988 Compliance Evaluation Inspection. No other unacceptable ratings were documented.

SURFACE WATER ROUTE

Lying on the southern border of the Nuodex site is the Raritan River. The Raritan River flows into the Raritan Bay approximately 4 miles downstream of the site. This area of the river is tidal. Crows Mill Creek runs along the eastern border ot the property to the Raritan River. On site are three stagnant bodies of surface water, West Lake, Middle Lake, and Hartmann's Pond. Sediment sampling has shown contamination in the lakes and pond with volatile organics and metals. The southern half of the site is a coastal marshland area.

Nuodex was issued a NJPDES Permit (No. 0000116) on March 7, 1985 for the discharge of stormwater runoff to Black Ditch and Slingtail Creeks. Black Creek is approximately 0.60 mile southwest of the site and Slingtail Creek is approximately 0.25 mile northeast of the site. Both creeks flow to the Raritan River. Nuodex received an unacceptable rating for high total suspended solids, low pH, and for not meeting the toxicity limitation in their surface water discharge during a June 3, 1988 Compliance Evaluation Inspection. No other unacceptable ratings were docmented.

There are no surface water intakes for drinking water or irrigational use within 4 miles of the site. The above mentioned bodies of water may be used for recreational purposes such as boating or fishing. There are no Federally endangered species within one mile of the site.

There is a potential for contaminants to migrate to offsite surface water. On December 8, 1983, a fish kill was reported to the NJDEP by Nuodex. The fish kill was in a pond adjacent to Nuodex that is used for the discharge of their cooling water. No other information on this incident could be located.

AIR ROUTE

Nuodex has held up to 188 air pollution certificates under plant No. 15033. All certificates were cancelled on May 23, 1986 because operations at the facility had ceased.

Only one incident of an air release has been reported. Ten pounds of phosphorus oxychloride was released to the atomsphere on December 3, 1984. Employees of Nuodex and a neighboring facility were evacuated when a vapor cloud was emitted. No injuries were reported and the vapor cloud dispersed within minutes. There is no potential for air contamination on site as there are no materials being used or operations on site.

SOLL

Extensive sampling of the site has revealed soil contamination in various areas. Results are discussed below. Areas with soil contamination include the two lagoons and the three landfills. Also, there have been spills on the ground at various times while Nuodex/Tenneco was active.

DIRECT CONTACT

There have been no reported incidents of direct contact; however, a potential exists. Hartmann's Pond, West and Middle Lakes, and one of the landfills are north of the fenced plant area. These areas have been shown to be contaminated. Also, the fence along the plant area does not extend all the way to the Raritan River. The public may enter the site through this area. There is a residential area 0.60 mile north of the site. No employees are on site since the facility is closed.

FIRE AND EXPLOSION

No incidents of fire and/or explosion have been documented. There is no potential for fire and/or explosion since there are no materials used on site and operations have ceased.

ADDITIONAL CONSIDERATIONS

Two areas with no vegetation were noted during a July 16, 1985 NJDEP inspection. The first area was between two of the landfills and the other between two salt tanks and Building No. 12. There is a potential for other areas to become damaged. Nuodex reported a fish kill in a pond adjacent to their property on December 8, 1983. The pond was being used for the discharge of their cooling water. A potential for a similar incident exists if contaminants migrate offsite. There is a potential for contaminants to enter the food chain; some of the contaminants are bioaccumulative. Contaminants may migrate offsite via runoff.

PRIORITY DESIGNATION

Data collected for this report has revealed that Nuodex is a high environmental concern. Soil, sediment, and groundwater sampling has shown high levels of contamination throughout the site. Groundwater is used for drinking purposes northwest and south of the site.

SUMMARY OF SAMPLING DATA

Sample date: January 19 through 22, 1982

Sampled by: Geraghty & Miller, Inc.
Syncset New Jersey

Syosset, New Jersey

Samples: 39 Monitoring Wells

Laboratory: Mead Compuchem (#A82058)

Research Triangle Park, North

Carolina

Parameters: Volatile organic, inorganic,

pesticide, and acid extractable

compounds

Sample description: Groundwater samples were collected

from 25 shallow wells and 14 deep

wells.

Contaminants detected: Benzene was the most prevalent

compound detected. Well Cluster #7 (shallow and deep) had the highest concentration of contaminants.

This well cluster is along the western border of the property.

(ppb)

	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE
Well# Bl	ND	ND	ND	ND
Well# B2S	510	130	ND	ND
Well# B2D	680	76	ND	ND
Well# B3	ND	ND	ND	ND
Well# B4	490	4,700	800	ND
We11# B5S	10	66	45	45
Wel1# B5D	ND	. ND	ND	ND
Well# B6S	ND	ND	ND	ND
Well# B6D	· NA	. NA	NA	NA NA
Well∦ B7S	200	11,000	1,100	. 12
Well# B7D	250	16,000	1,900	NA
Well∦ B8S	ND	19	ND	ND
Well∦ B8D	ND	ND	21	ND
Well# B9D	ND	320	ND	ND
Well∦ B10A	ND	ND	ND	ND
Well# B11	ND	ND	ND	ND
Well# B12-PART1	ND	ND	15	ND
Well# B12-PART2	ND	ND	·14	ND
Well# B12-PART3	ND	ND	16	ND
Well# B12-PART4	ND	, ND	10	ND
Well# B13	16	ND	ND	ND
Well# B14	ND	ND	ND	ND
Well# B15	ND	52	NĎ	ND
Well# 16A	ND	ND	ND	ND
Well# 16B	ND	ND	ND	ND
Well# 17A	200	2,500	600	14
Well# 17B	. 36	180	15	ND
Well# 18A	400	ND	ND	ND
Well# 18B	340	17	ND .	ND
Well# 18C	700	80 - ,	ND	ND
Well# 19A	ND	ND	33	ND
Well# 19B	ND	ND	ND	ND
Well# 20A	ND	ND	ND	ND
Well# 20B	ND	ND	ND	ND
Well# 21A	31	160	22	29
Well# 21B	ND	ND	ND	ND
Well# 22A	230	45	17	14
Well# 22B	ND	ND	ND	ND
Well# 23	NA	NA	_ NA	NA .

ND= NOT DETECTED NA= NOT ANALYZED

QA/QC:

Compounds were analyzed according to approved GC/MS protocol. No other information found in documentation.

Sampled date:

June 4, 1984

Sampled by:

Princeton Aqua Science Edison, New Jersey

Samples:

Four (4) settling pond sludge

samples

Laboratory:

Envir. Testing & Certification (#A82059) (ETC) Edison, New Jersey

Parameters:

Metals, pesticides, herbicides, and

volatile organics

Sample description:

Two sludge samples were collected from each of the lagoons on site.

Contaminants detected:

	<u>E7070</u>	<u>E7071</u>	E7072	<u>E7073</u>
Ethylbenzene (ppb)	ND	111,000	ND	124,000
Toluene (ppb)	360,000	681,000	661,000	721,000
Chloroform(ppb)	ND	ND	57,000	ND
Arsenic (ppm)	0.5	1.6	1.0	3.2
Barium (ppm)	4.0	10.0	3.0	6.0
Chromium (ppm)	90	190	160	260
Lead (ppm)	19	43	26	42
Mercury (ppm)	0.1	0.2	0.2	1.0

ND- NOT DETECTED

QA/QC:

Replicate blanks, spikes, and matrix spikes are provided. All sampling was performed in accordance

with NJDEP protocols.

Sample date:

October 17, 1985 thru January 27, 1986

Sampled by:

Princeton Aqua Science; (PAS)

Edison, New Jersey

Samples:

156 soil samples and 27 groundwater

samples

Laboratory:

Princeton Aqua Science (#12064)

Edison, New Jersey

Parameters:

Priority pollutants plus 40 peaks

Sample description:

The groundwater samples were collected from on site monitoring wells. The soil

samples were collected from various

areas on site.

Contaminants detected:

High levels of PCBs were discovered in a

former production area. The most contaminants were discovered in the

lakes and pond. Toluene and

formaldehyde had high concentrations in the wells. A summary of contaminants

detected is provided in Table 1.

QA/QC:

All samples were collected in accordance with NJDEP and USEPA protocols. Field and trip blanks were utilized. QA/QC information was submitted to the NJDEP, BISE as

attachments to the PAS report.

Sample date:

June through October 1987

Sampled by:

Princeton Aqua Science Edison, New Jersey

Sample:

36 groundwater and 222 soil samples

Laboratory:

Princeton Aqua Science (#12064)

Edison, New Jersey

Parameters:

Groundwater samples were analyzed for priority pollutants plus 15 peaks. Soil

samples were analyzed for metals, base/neutrals, volatile organics, pesticides, or total petroleum

hydrocarbons.

Sample description:

The groundwater samples were collected from on site monitoring wells. The soil samples were collected from various

areas on site.

Contaminants detected:

High levels of various metals were detected in soil samples. Toluene was present in high concentrations in on site monitoring wells. A summary of contaminants detected is provided in

Table 2.

QA/QC:

All samples were collected in accordance with NJDEP and USEPA protocols. Field and trip blanks were utilized. QA/QC information was submitted to the NJDEP, BISE as attachments to the PAS report.

RECOMMENDATIONS AND CONCLUSIONS

Nuodex has implemented an extensive sampling program under guidance by the NJDEP, DHWM, Bureau of Industrial Site Evaluation (BISE). Currently Nuodex, through their contractor, is developing a feasibility study and cleanup plan for the site. Additional sampling by the NJDEP, DHWM, Bureau of Planning and Assessment is not recommended at this time.

Donna J. Restivo /HSMS IV NJDEP/Bureau of Planning and Assessment January 25, 1989

TRBLE 4	SURVERY (F SOIL S	• -	ALYTICAL R				-		
TUTA HAGINIKA RARRAKKALIAN KUD SAMPLE AREA	UL JOHOLNOHOL JUL	LE MARIE MARIE I	101466101 101611 A		B-WEST		B-ERST L			POR'S POND:
SAMPLE POINT		11	1	R2	: 81	: 82	83	84	85	: 86 :
SAMPLE DEPTH			: 0"-6"	: 18"-24"			(; ;
PROPRETERS TO A REMAINS AND AND AND A REMAINS AND A REMAINS AND	H100H100000H18	14 14E 14E 1	KRIMEN INC	ARRAN ANA	MR WHARAS					
PRIGRITY POLLUTANT UOLATILE GRANICS:		İ								
TOLUENE	NA	MD	NA	20.65	T ND	H D	MD	MO 	27.00	£170.00
NETHYLENE CHLORIDE	N O	ND	MD	MD ·	71.57	18.40	0.60	0.0	. NO	ND
PPIORITY POLLUTANT BASE NEUTRALS: ************************************	14.00	MA	NO.	NA	NO	77.00	300.00	81.00) <u>+</u> NO	NO
INDRGAMIC COMPOUNDS:	0.74	MA	мb	, NA	31.00	39.00	33.00	9.90	29.00	23.00
pH (UNITS)	6.70	MR	4.40	NA.	6.97	6.85	6.36	6.47	4.95	3.91
TOTAL PHOSPHATE	259.00	MA	44,00	MA	93000.0	45000.00	15000.00	15000.00	260000.	00 78000.00
PHENOLS	10	NA	#D	#A	157.00	133.00	60.00	15.00	81.00	63.00
APSEMIC	11.00	MA	MO	MA ,	190.00	130.00	130.00	47.00	75.00	140.00
BERYLLIUM	. NA	MA	MA	, NA	10.00	7.90	2.20	2.50	5.80	7.00
CEDATUR	11.00	MA	3.90) MA	21.00	16.00	5.40	4.90	5.80	16.00
CHROMIUM	44.00	ŅΑ	11	ĦĄ	63.00	200.00	76.00	17.00	150.00	1200.00
COPPER	920.00	MA	27.00	MA	6000.00	1300.00	160.00	100.00	190.00	1100.00
LEAD	500.00	MA	40.00	HA	3900.00	1300.00	220.00	110.00	370.00	2000.00
MERCURY	0.59	ĦA	0.27	HA.	11.00	12.00	₹ 0.€	0.15	0.35	15.00
MICKEL	43.00	MA	RD.	RA	200.00	160.00	53.00	32.00		530.00
STLVER	MA	. RA	· · NA	MA	52.00	39.00	MO.	MO	HO.	MO
ZINC	్ల2130.00	RA	13.00	RA	1900.00	2700.00	170.00	220.06	1 100.00	1200.00
PESTICIDES: HRMANISHERS 4.4-000	ð.a	MA	MO	RA.	, M		ma	NA	, , , , , , , , , , , , , , , , , , ,	e-:
4.4-00T	0.67	;- MA	MO	MA	MA	MA	HA	HA	, MA	KA
PCB'S: NEHNNH RPOCHLOR 1242	2.10	» NA	MO	NA	RA	Ka	#A		MA	HA
AROCHLOR 1254	4.00		MD							
	7,00	PAT	#U		MA	M		NA	NA	MA

. TRBLE 5

NUODEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE AMALYTICAL BESULTS RERS "R" AND "B"

SAMPLE AREA	!		A		: B-NEST	LAKE	: B-ERST	LAKE	: 8-HARTH	ANN'S POND:
SAMPLE POINT		A1		R2	i 81 .:	82	: 83	: 84	: 85	; B6 ;
				: 18"-24 "			:	:	:	; ;
н и я на на наказа хва жил ж PRP AMETERS Ями нижном вихомы чих имя и	!	, MARKET SAN	EXPERIMENT	********	KOKAN NEWSKA NOBEL NE				,	***********
LTBRPRY SEARCH OFFGRMICS (UDLATILE OPFGRMIC FRACTION):										
RCETONE	MA	MR	MA	MA	17.00	10.00	8.20	2.10	. NO	MD
BENZALDENYDE	MA	NA.	MR	MA	NO (MD	. ND	MO	12.00	550.00
BENZOIC ACID	MA	MA	MA	MA	NO	ND	MD.	NÔ	270.00	3600.00
BENZYL ALCOHOL	NA	MA	NA	MA	110	MD	- NO	MO	- 47 .00	700.00
METHYLETHYL KETONE	ĦA	ĦA	NA	MA .	4.50	32.00	NO.	0.32) NO	MD
CHLOPOTOLUENE ISONER	MA	MR	NA.	MA	10.00	86.00	NO	ND	MO	MD
DIMETHYL CARROWATE	MA	MA	MA	MA	NO.	MD	0.54	MD	110	ND
2,2,3-TRI METHYL BICYCLOK2.2.1DHEPTAME	MA	MA	Ħfi	MA	0.83	#D	MO	MD	HO	· ND
UNKNOWN HYDROCARBON	MA	MA	MA	MA	NO	16.00	2.20	NO	NO.	MO
LIBPRRY SEPRCH OPGRMICS (BASE NEU- TPAL/ACID EXTRACTABLE FP9(TIONS:	- '									
HYDROXY BENZALDEHYDE	MA	16 8 ·	MA	MA	MD	MD	ĦD	MO	46.00	ND ND
2-METHAL-1- PROPENE TETRAMER	MA	MR	MA	MA	. 10	47.00	MO	NO	, MO	жO
2-METHAL-1- PROPENE TRINER	76	MA	MA	, MA	· ND	31.00	. MD	NO	Ю	MO
1,1-0XYGISIBENZENE	NA.	NA.	MA	IM.	210.00	HO	NO	MD	NO	MD
PHTHPLATE	Mf	. 100	HR	MA.	10	ND	54.00	MD.	HD	ND

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOUL ABOUT.

^{2.} ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;MR" SIGNIFIES NOT AMALYZED.

^{4. 90&}quot; SIGNIFIES NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

TRBLE 6		MICOEX, INC SIRBYRY OF MERS "D" N	SOIL S	MPLE MAL	TION RE						
YEAR YAKK YORK TEUBOOK TROCK TEUBO SPATPLE FIRER	091 1888888X 1881 	12B(10-01.E00006	. D D	1909) 1009991 I	1991 1993:1993 - -	109/109088	88A MEBUS 1	96K 1 6 666	DOLEDHINGE DOS E		JOEL JORN HTM
SPINPLE POINT	FN-280	D 1		1 92	2 1	E1-3	E44 1	E7	; £9 ;	£10 :	E11
SAMPLE DEPTH		6°-6° 118								12"-18"	
HAR HULVIN WHILES HER FISS PARAMETERS HAIN WAX AME WHEELS HAN HISS	;	, iggi ingilakidaci ,	K HEHETHE	1099 104661X1 ,	GER KRIFT KRIGK	1961 1941 1OF	189CL 189C891 V	DEN 1880	901 KKB PHOLION	1861 1841 1861	DINK KATAR
VOLATILE OPPONICS:	_		0.30	_	0.19	MA	N R	MA.	0.25	0.13	MD.
METHYLENE CHLORIDE MCETONE	110 110 110	. MA	 MA	700 700					0.065	0.011	
		,									
PPI ORITY POLLUTANT BASE NEUTRALS:											
BIS (2-ETHYLHEXYL) PHITHALATE	-41.00 Z	10,413	M A	₹3.00°	**	. NA	N A	NA.	N A	16	N A
INOPONKIC COMPOUNDS:				•							
CYANIDE	MD	· MA	MA	140	199	MA	MA	NA	MR	MA	MF4
pH (UNITS)	3.70	8.00	MA	6,10	MA.	· NA	NA.	MA	NA.	MA	MA
PHENOLS	0.29	MA.	MA	NA	MA.	MA.	MA	MA	MA	MA	MA
RPSENIC	18.00	MA.	MR.	MA.	RA.	MR	NR.	MA	MA	MA	NA
CADRI UR-	1.40	NA ·	WA	MA.	MA.	MA	WA	MA	MA	MA	NA
CHP ON I IJM	21.00	MA	MR	MA.	NA.	NA.	MA	MA	MA	NA	NFI
COPPER	2.90	MA .	MA	NA	NA .	, NA	NA,	Mi	NA.	MA	NA
LEAD	13.00	. W A	MA	M A	FR '	MA	WA .	MA	MA	, NA	MA
MERCUPY	18.00	NP.	MR	18A	MA.	MA	NA .	188	. MA	NA.	MA
MICKEL	24.00	NA.	100	MA.	MA.	MA.	WA	WR	MA.	NA	MA.
SILVER	0.08	189	MA ·	78	100	NA.	WA.	HR.	MA	NA.	MA
ZTNC	98.00	NA NA	NA.	NA	MA	NA	NA .	, NA	MA	NA.	NA
PCR15:											
Richard Line 15:											
TOTAL	M A	19 9	MA	MA	MA		10	HD	MA	NA .	. NA
CLUMANIC EDACTION:	·				٠.						
RETONE -	₩.	96	0.12	MA	0.091	WA.	MA	198	MA	M F	MA
HETHYL PETRNE	NO.	MA .	MC	MA.	0.078	#P	NA NA	NA.	MA	16 A	#A

TRÉLE B NUCCES, INC. - FOLDS, NEW JERSEY SUMMARY OF SOIL SMPLE MONLYTICAL RESULTS CP4PF4RP4AP4AP4APARARAKARARAKARAA SEMPLE PREA CHAPLE FOIRT 1 F5 1 F6 1 F7 1 F3 1 F9-11 1 F12-14 1 F15 1 SPAPLS DEPTH - 1 07-67 (187-24%) 07-67 (187-24%) 07-67 (187-24% TO 400 SPENDED TO BE A SERVICE OF THE SERVICE OF TH PROPRETERS ***************** PRICEITY POLLUTANT SPEE MEUTERLE: ------ 0.18 E M STH ME MEMOR COMMITTERS 6.27 . m # 0.312 M 45 4. 25 1000 pm SHEED (A) PYRENE KD PENEDIGAD, LOPERILENE M 9.40 ю CHRYSENE MO DEBENZO : A , SOMMEHRACEME NO 0.062 ND 39 0.073 6.16 m 10.8 M 2 00.5 6.42, A IM DL-n-3VITYLPHTHALATE FL'SCEMM'HENE 0.063 × M ΝĐ ra. 0.11 0.21 % M 110 100 Eq 1('E190(1,2,3-cd) PYREME 4.32 M NO ND FI-ENFATI:RENE ~ 9.085 🐣 M 2.30 Ю PI REILE INSPERNIC CORPORADS: HERRE CHRISTING CHRIST 9.20 9.20 8,40 8.70 5.80 8.40 PH CONTES 155.00 400.00 220.00 345.00 TOTAL PHOSPHATE PETROLEUM HYDROCARECMS H М 0.30 0.20 0.40 11.00 PHENOLS PCB'S:

HEAREN TOTAL

 $\overline{}$

		•					٠.	
TABLE 9	SUMMERY OF	F SOIL	OROS, MEN JE SAMPLE AMALY	TTCAL RE				
HATE PREDERING HER HELD HOLD HOLD HOLD HOLD HOLD HOLD HOLD HO	**************************************	* HER (84)		(
SAMPLE POINT	61-	2	: 63 :	64	65 - 4 :	67-	8	69
SAMPLE DEPTH			1 0"-6" OCKNOCK NOW WHO			06" ;		
POPAMETERS	:							-
PRIMRITY POLLUTANT VOLATILE ORGANICS: ************************************	***	MÔ	8 8	NA		WA	.081	MA
SE STREET CHEUKIDE								
PPTOPITY POLLUTANT BASE MEUTRALS:								
BENZO(3) ANTHRACENE	10	MA	20.77 ₹	MD	NO ·	· MD	. 118	MA
CEN 20/3 (PYPENE	ъ	NA	.0.65	MD	NO	MD	NA.	NA.
PENZOKEUR) PLUMPANTHENE	NO	NA	1.60	ND	1.24	MO	NA.	MA
BEN 20(g, h, L) PERYLENE	ю	MA	20,35	ND	MO .	MO	MA	NA.
CHRYSENE	Ю	MA	6.89	MD	NC	MO	MA	MA
FLUORANTHENE	МО	MA	₹ 0.87	MO	NO	MO	MA	NA
INDENO-1.2.3 (c. d P/PENE	Ю	MA	0.40	MD	NO	. MO	MA	MA
PHEMANTHRENE	ю	MA	0.30	MO	NO.	MO.	MA	KA
	#0	MA.	0.75	ND	10	MO	MA	MA
INGRGANIC COMPOUNDS:								
be ciniles>	6.30	MA	6.40	7.10	5.80	7.80	WA	5.2
APSENIC	74	MA	7.30	5.90	5.70	MA	na	MA
Ceptin	NA	MA	MD .	3.10	2.30		MA.	mA
CHRONI UH	MA .	NA	35.00	1440.00	203.00	7A	MA	-
COPPER	 -	NA	19.00	198.00	372.00	MA .	WA.	180
LEAD	MA.	KA	26.00	115.00	248.00	MA .	MA -	, MA
MERCURY			0.00	0.20	0.20	MA	NA.	
NICKEL	NR	MA.	M0	32.00	44.00	NA.	HA.	HA.
SILVER	₩	HA		110	1.00		NA	MA.
ZI NC		MA			724.00		#A	MA.
OFGANICS:								
entroleum hydrochrbons	NA	MA	- ND	10.00	112.00	MA	MA	635.0

		OF SOIL " RWD "		HUNLYTIC	IL IESOL	3						
ieri keri kerikerik ierik ierik ierik i Sanaple ingen	19-01-19696-01-1 1	199089686	X 1908991 18	GK 198K 199K	1980091198		seveer reée N	9Gf 184X 184	DO SEE	HOLINGE ID	10811881	BRADO
SAMPLE POINT	-; ! K:	1	: K	 2	; K	1	: 14	;	15-6	: N7-8	: W9-10	H11-12
SAMPLE DEPTH	0"-6"	: 18"-24"	: 0"-6"	18"-24"	: 0°-6°	18"-24"	: 0"-6" :	18 *-24"	0.4.	: 0*-6*	0"-6"	0°-е"
DIGN 19171 19171 1013 (HIGH 1916) 1916) PARAMETERS HATRAKK HIGK 1916) 10181 19161 19161	:		X 1808BISK 10	ICT 1801 1801	MICHIGAEN YOU	inu xoo r	161 1061 191191	DET 100K 100	1901 1001 16	HR XXX AHD	T ROLL H RJEW W	*******
PRIORITY POLLUTANT NOLATILE ORGANICS:		-										
TOTAL	MA	HC	MA.	NO.	WA	ND	NA	110	RA	MA	MA	MA
CB'S:												
144 4 KE												
TOT AL	MA.	18A	MA.	14A	WA	RA	NA	16	MD	140	NO	MO
INOPGANTIC COMPOUNDS:										,		
FREEHRENKERERRRRFFER pH (UMITS)	8.90	MA	8.60	-	7.90	MA	8.60	•••	'MA	-	MA	MA
			FORDS, NE SAMPLE A			s						
(энчэнницицары) двар (ARPLE AREA	SUMMARY AREAS "H	OF SOIL	SAMPLE A	MM MLYTIC	AL RESULT	K181 4 H H H	terri diki			Н <u>и</u> пичькі	1 K> F4 > 4 4	• :
	SUMMARY AREAS "H	OF SOIL H" AMD "I	SAMPLE A	*********	AL RESULT	I					:I 10-11	• : -
SAMPLE POINT	SUMMARY AREAS "H WHEREBERE : : : : : : :	OF SOIL I'' AND ''' HERETEKE	SAMPLE A	**************************************	RL RESULT	I I	6 ;		·	: 18-9	:I10-11 : 0"-6"	-
AMPLE POINT AMPLE DEPTH CHARRESTO SARRESTERS GRANETERS	SUMMARY AREAS THE MARKET HAS A STATE OF THE	OF SOIL H" PMD "] -2 : 18"-24"	SAMPLE A I " * REMUNER ** : 13-	**************************************	RL RESULT	I I 0'-6"	6 ;	0°-6°:	18*-24*	: 18-9 : 0°-6"	: 0"-6"	-
AMPLE POINT AMPLE DEPTH BRANKEN AND HER HER HEREN APARETERS HER HEREN HEREN HEREN MEI OFFITY POLLUTANT	SUMMARY AREAS THE MARKET HAS A STATE OF THE	OF SOIL H" PMD "] -2 : 18"-24"	SAMPLE A I " * REMUNER ** : 13-	**************************************	RL RESULT	I I 0'-6"	6 ;	0°-6°:	18*-24*	: 18-9 : 0°-6"	: 0"-6"	-
AMPLE POINT AMPLE DEPTH BREETERS BREETERS WEIGHTTY POLLUTANT AULATILE ORGANICS:	SUMMARY AREAS THE MARKET HAS A STATE OF THE	OF SOIL H" PMD "] -2 : 18"-24"	SAMPLE 6 I " * REHEREN H : 13- : 0"-6"; * REHEREN H	**************************************	RL RESULT	I I 0'-6"	6 ;	0°-6°:	18*-24*	: 18-9 : 0°-6"	: 0"-6"	-
SAMPLE POINT SAMPLE DEPTH CHARRESTS ASSESSED WHEN MENEN CAPACTETES CHARRESTY POLLUTANT AUGUSTILE ORGANICS: CHARSES CHURIDE PRIORITY POLLUTANT SASE MEUTRALS:	SUMMARY AREAS ** PMH H H H H H H H H H H H H H H H H H H	OF SOIL 4" AND "] ************************************	SAMPLE 6 I " * REHEREN H : 13- : 0"-6"; * REHEREN H	**************************************	RL RESULT REGISTER 1 15 : 18*-24*;	I I O'"	6 ; : 18"-24°: » « нун явия	0°-6°:	18*-24*	: 18-9 : 0°-6"	: 0"-6"	-
SAMPLE POINT SAMPLE DEPTH SAMPLE DEPTH SAMPLE DEPTH SAMPLE DEPTH SAMPLETERS SAMPLETERS SAMPLETTY POLLUTANT AULATILE ORGANICS: SAMPLETERS CHLORIDE PRIORITY POLLUTANT SASE MEUTRALS: SAMPLETERS:	SUMMARY AREAS ** PMH H H H H H H H H H H H H H H H H H H	OF SOIL 4" AMD "] *** AMD "] *2 *2 *118*-24"; *** НЕЖИНИЕ!	SAMPLE 6 I " * REHEREN H : 13- : 0"-6"; * REHEREN H	**************************************	RL RESULT REGISTER 1 15 : 18*-24*;	I	6 ; : 18"-24°: » « нун явия	0°-6°:	18*-24*	: 18-9 : 0°-6"	: 0"-6"	-
AMPLE POINT AMPLE DEPTH WHENEVERS WHENEVERS WHICHITY POLLUTANT WULATILE ORGANIOS: DEN VENEVER WHENEVERS WEIGHTY POLLUTANT WEIGHTY POLLUTANT SPSE MEUTRALS: WHI WHENEVER WHENEVERS WHI WHENEVERS WHI WHENEVERS WHO WHO WHENEVERS WHO WHENEVERS WHO WHO WHO WHENEVERS WHO WHO WHO WHO WHENEVERS WHO	SUMMARY AREAS ** PHERITAGE IT- IT- IT- IT- IT- IT- IT- IT- IT- IT	OF SOIL 4" AND " 1844 HENNER 2 188-24" 10010	SAMPLE 6 I " * HOHERMAN HA : I 3- : 0 "-6" ; * KOHERMAN HA	**************************************	RL RESULT ***********************************	I	6 ; :18"-24": AKKYN RAIG	же канкания 17	18°-24°	: 18-9 : 0"-6" ЭСИ ИН ПЛИН	; 0"-6"	-
PAPAMETERS WHENEVERSENES SENSES SENSES PRIORITY POLLUTANT MULATILE ORGANIUS: WHENEVERSE CHLORIDE	SUMMARY AREAS ** PHERITAGE IT- IT- IT- IT- IT- IT- IT- IT- IT- IT	OF SOIL 4" AND " 1844 HENNER 2 188-24" 10010	SAMPLE 6 I " * HOHERMAN HA : I 3- : 0 "-6" ; * KOHERMAN HA	**************************************	RL RESULT ***********************************	I	6 ; :18"-24": AKKYN RAIG	же канкания 17	2.00	: 18-9 : 0"-6" ЭСИ ИН ПЛИН	; 0"-6"	-
SAMPLE POINT SAMPLE DEPTH INFRANCESES INFRANCESES PRIORITY POLLUTANT AULATILE ORGANICS: INFRANCEME CHLORIDE PRIORITY POLLUTANT SASE MEUTRALS: INFRANCEME CHURANT SASE MEUTRALS: INFRANCEME CHURANT SASE MEUTRALS: INFRANCEMENTALS: INFRANCEMENTALS: INFRANCEMENTALS FOTAL PCB'S:	SUMMARY AREAS ** PHERITAGE IT- IT- IT- IT- IT- IT- IT- IT- IT- IT	OF SOIL 4" AND " 1844 HENNER 2 188-24" 10010	SAMPLE 6 I " * HOHERMAN HA : I 3- : 0 "-6" ; * KOHERMAN HA	**************************************	RL RESULT ***********************************	I	6 ; :18"-24": AKKYN RAIG	же канкания 17	2.00	: 18-9 : 0"-6" ЭСИ ИН ПЛИН	; 0"-6"	-
AMPLE POINT AMPLE DEPTH IN AMPLE PES IN AMPLE PES IN AMPLE ORGANI CS: IN AMPLE ORGANI COMPOUNDS:	SUMMARY AREAS ** PHERITAGE IT- IT- IT- IT- IT- IT- IT- IT- IT- IT	OF SOIL 4" AND " 1844 HENNER 2 188-24" 10010	SAMPLE 6 I " * HOHERMAN HA : I 3- : 0 "-6" ; * KOHERMAN HA	99 ALYTIC	RL RLSUL:	I I O'	6 ; :18"-24": AKKYN RAIGH	17 0°-6°:	18°-24°	: 18-9 : 0"-6" ЭСИ ИЗ ЯЗЯН МА	: 0"-6"	-
AMPLE POINT AMPLE DEPTH MERHUMMAN ANNUMER HAR HENN APARTETES WHICH THE ORGANICS: DER NO HONE OF CHLORIDE PRIORITY POLLUTANT SASE MEUTRALS: HENNEMENT RALS: HENNEMENT HANNER HANN OTAL CB 'S: HANNER OTAL	SUMMARY AREAS ** PHERITAGE IT- IT- IT- IT- IT- IT- IT- IT- IT- IT	OF SOIL 4" AND " 1844 HENNER 2 188-24" 10010	SAMPLE 6 I " * HOHERMAN HA : I 3- : 0 "-6" ; * KOHERMAN HA	0.13	RL RLSUL:	I I O'	6 ; :18"-24": AKKYN RAIGH	17 0°-6°:	18°-24°	: 18-9 : 0"-6" ЭСИ ИЗ ЯЗЯН МА	: 0"-6"	-

TABLE 12	NUODEX, INC FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE MARLYTICAL RESULTS RREA "J" NUODER NUUBBBB KOOK MEDICARI KROK MIND KROK MEN MEN MEN											
RHIENHERHER WICH HILL HER YER SAMPLE AREA	DBKK NJUBARK I 	00i 1890isin		ita yanga kulak J	186K KOLIK HTCK	CHAIR STAIN ME						
SAMPLE POINT		-2 :	J5			6 1						
SAMPLE DEPTH	-;;- : 0"-6" ;	18*-24"	06.	 : 18"-24°	: 0*-6* :	18*-24*;						
STATEMENTS AND	:	(O) HEHOU	ENSEMBLE SE	RT HOOL HO	KORTHONI II II I	· ·						
PPIORITY POLLUTANT VOLATILE ORGANICS: HIN HANNING HELE HAN BENZENE	14 0	0.031	- INA	ю	M A	ND						
CHL ORDFOR II	. MA	0.129	MA	ND	WA.	MD						
METHYLENE CHLORIDE	NA	0.955	T MA	0.06	∵ N P	MD.						
TOLUENE 1	MA.	0.655	E NA	ю	NA	MD						
INOPGANIC COMPOUNDS:	3.00	MA.	MO	MA	HC'	MP						
pH (UMITS)	8.41	149	6.07	MA.	4.97	MA						
ANTIMONY	13.00	**	MO	M	RD:	NA NA						
APSENT C	0.40	m	2.10	MA	1-80	NA						
CRONIUM	1.20	118	HC)	· M	0.40	MA						
CHEDITUIN	13.00	M.	4.70	NA.	5.90	MA						
COPPER	1900.00	, m	12.00	MA	29.00	MA						
LEAD	230.00	16	6.40	MA	160.00	NA						
MERCURY	0.70	NA	1.50	MA	1.70	NA.						
NECKEL.	27.00	NA .	3.60	· MA	8.40	NA						
SELENIUM	10	MA.	ND	M	1.10	RA						
SILVER	2.40	MA	HD	MA.	NC)	9A						
THALLIUM	8.40	MA .	ND	180	MD .	MA						
ZIRC	130.00	# #A	27.00	IR	€0.00	MA						

INKNOWNS (TOTAL)	1900.00	INA.	1700.00	186	MD:	MA.
IBPAPY SEAPCH DEGANICS CBASE NEU- FPALYACID EXTRACTABLE FRACTION: CHARACTABLE STORMARCHER SOURCE SOU	NO	MA	200.06	NA	5200.00	NA
2.2-DIMETHYL-3-METHYL- ENE BICYCLO (2.2.13 HEPTANE	. NA	N O	NA	MO.	NG.	10.00
CHLOPO-TOLUENE ISOMER	NÁ	NO ·	NA.	110	NF.	100.00
BENZALDEHYDE	NA	.40 .0 0	NA	MD	NA	MO
IBMR И И И И И И И И И И И И И И И И И И И	MA	0.19	MA .	1.20	NA 	₩D
NY UNIVERSE VERNINGENER HERE PARAMETERS						
SAMPLE POINT		<u> </u>			. 0	
SAMPLE AREA	: 	 -2		J 		
TABLE 12 continued way kuppa karahara ya k	SUMMARY AREA "J"	OF SOIL		renal y TI (PAL RESULT	

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOUT.
2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.
3. "MA" SIGNIFIES NOT AWALYZED.

^{4. &}quot;NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

TRBLE 13

NUCCEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS RREA "K"

SPIPLE AREA	.;						'	K 						
SAMPLE POINT	R1-2	!	100	- 4	: 15	4 :	\$7	4	:	K9	; K	10	K	11
SAMPLE DEPTH NAVES NEW STATE STORE STORE STORES PAR AMETERS	!							-						
RPSSERRE ERREES PRE PÉLOSITY POLLUTANT REFERENCE ERREESE														
METHYLENE CHLORIDE	WA	4.20		0.16	NA	0.13	#A 	0.38	. NA	HD	#A	0-12	M A	0.21
PFIOPITY POLLUTANT BRSE MEUTPALS: BRSEWERNEWERRERE			_			_			_	_				
PHENANTHRENE		16A		#A			MD		HO	NA	ND	W?	MD 	N9
PYRENE	37.00	MA ·		#A	NO	<u> </u>	# 0		HO	MP	<u></u>		MD.	NA
THOPGANIC COMPOUNCS:	2.00	NA.	MO	MA	NO	164	MD	MA	N O		0.16	- '	0.72	NA
										#A	0.16			
PHENOLS	1.80	NA	1.30	MA	0.40	MA 	5.20	MA	2.90		3.80		7.50	NA
BUZENI (ND	#	8.10 	**************************************	NO	MR	MO		2.90	#A	••••• ••••		5.8ú 	NA
	10	NA	MC)	MR	7.00	#A 	#0	MA	MO	N P	NO 	# •	3.00	NA
CHP ONITUR	NC .	NA	15.00	MA	7.00	MA	5.00	NA	14.00	NA.	17.00	W 4	15. 00	MA
CUPFEF	8.00	NA .	8.00	MA	NO	, MA	13.00	MA	8.00	MA	9.50	N F1	8.80	†4Ĥ
LEAC -	NO	NA	ME)	MA	NO	MA	46.00	NA	HC	H R	52.00	16 4	MO	146
MERCURY	0.16	#A	0.90	MA	0.17	MA ·	8.50	€ NA	1.00	MA	1.70	NA	1.50	NA
MI (PEL	MŪ	₩A .	NO.	MA	NO	NA	· ND	MA.	MD.	NA	12.90	MF	MC	NA NA
S) LYEF	MO	MA	6.00	MA	NO NO	WR	MD	. MA	MD	MA.	NO.	 NF	MQ:	74A
21 MC	13.00	#A	€.00	MA	58.00	MA	39.00	MA	31.00	<u></u>	40.00	WF	28.00	NF
errerere Estitions:														
. Us to the first	MD	36	340.00	-, MA ,	1120.00	, NA	27.00	, 'NA	1500.60	NA C	905.00	NF-	MD.	NA
.IBRARY SEARCH PRANTCS (VOLATILE MGANTC FRACTION): Dessesphissessess													*******	
CETONE	MA	WO.	MA	WD	MA	0.065	KA	0.23	WA.	, MD	MA	KC	MA	Nū
ETHYLETHYL KETONE	RA	RÛ	MA	MĎ	NA	MD	MA .	HD		17.00		NC	R4	NC.
MEDRO-FOLVENE ISOMERS TOTAL	MA	10	NA	MD	NA	MD	MA	10	#A	400.00	MA.	NC	MH	N(:
, 1-6184 (ж.) - 7- нулған Редеяне	NA	MO .	NA .	MO	NA	MD .	RA	MO	MA.	MD	NA	HC.	Mfi	MI.
rang														

TABLE 14

NUODEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS AREA "L"

	:						- L				•••••		!
SAMPLE POINT	L1-2	2	U-	4	i Li	1-6	: L7-8	: L9-10	:L11-12	:L13-14	11:15-16	'L17-1?	. F 3a- 50
PMPLE DEPTH	: 06. :	18"-24	': 0"-6" ;	18"-24"	: 0"-6"	: 18 "-24"	. 0	: 0"-6"	: 18"-24"	.: 00.	: 18"-24"	19"-24"	
PARMETERS	;												
ouganigual van aparami nika	E												
OF INPITY POLLUTART													
LUFINE TOTALNE	#A	NO	NA	0.08	NA NA	1000.00	" MA	NA	110	NA	NA 	ЯF	4m
eele acitedels: eelesta boffituat											•		
1,2,4-TPI CHLOROBENZENE	MO	NA 	14.30	XA	213.00	NA	NA	MA.	NA .	MA 	4A	N F	
											٠		
ch *MITS)	5.00	NA	4,30	48	3.30	149	38	NA	MA	NA	4A	464	49
(× 4M) DE	#D	NA	MC.	٩A	1.10	MA:	NA	MA	196	NA	- NA	964	414
DREMUTS.	5.00	NA	5.00	NA	25.00	MA	MA	MA	MA	ĦA.	NH	WP.	46
on Lite OMA.	MD.	NA	M()	48	NO.	PAR	MA	MA	MA	MA	NA	NSA	44
PPSEMIC	16.00	NA	11.00	NA	21.00	NA.	NA	MA	MA	- 44	NA	46	44
BERMILIUM	NO	NA	N()	MA	ND	MA	MA	NA	NA	, MA	NA	4A	44
(eom) um	1.60	NA	9.20	NA	2.90	NA.	MA	MA	MA	ЯŘ	NA	чP	47
CHPOMIUM	30.00	144	26.00	NA	36.00	NA.	MA	MA	NA ·	ĦA	NA	МЬ	NH
CPPER ·	180.00	t4A	107.90	MA	124.00	MA	MA	MA.	MA	MA	ŅA	MA.	46
1.540	420.00	146	1650.00	MA	507.00	196	MA	MA	MA:	NA	tiA.	NG	MÁ
™ERCURY	11.00	MA	15.00	NA	4.20	NA NA	MA	MA	NA	ĦA.	<u>!</u> !A	71	44
NICKEL	56.00	149	21.00	NA .	63.00	MA	NA	MA	MA	NA	!4 A	, 4A	48
SELENIUM	ND	†4A	NO	na.	ND :	MA	· NA	MA	™ A	NR	NA	412	ų a
ELLMER	21.00	149	5.00	MA	5.60	NA.	MA	MA	MA	MA	149	NA	ΝA
THALLIUM	MD	MA	NO	HR	MO	MD	NA	MA	MA	**	-NA	NA	NA
	360.00	NA	87.00	MA	304.00	Ç MA	MA.		MA	HA	MA	NA .	. NA
00010	·				-								
PC8*S: HHERME PC8-1248	MA	146	MA	MA	M		- 3 - 64 - 6-	0 17000.		#A	NA	NA.	NA

ľ

TABLE 15

NUCCEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS AREA "M"

SAMPLE AREA	1				ñ		
SAMPLE POINT		Ħ	-2	: 113, 4, 5	; 15	;	N6 :
SAMPLE DEPTH		0.4.	: 18 *-24	1": 18*-24	· MIPE	: 0"-6"	18"-24"
OOORDBORDERREERREER PROPETEDS EMBRORDFREERREERREER	(EEK)					******	
PPIORITY POLLUTANT VOLATILE OPERMICS: REFERENCES			•				-
METHYLENE CHLOPIDE		* #A	0.19		#A 	N f-	0.30
P^F*1:	 						
TOTAL	٠,٠	MA	MA	<1.00	<2.00	WA	MA
INDESEMÍC CÓMEDÍMÓS							
DH (UNITS)		5.60	*	WA	MA	5.00	MA

- . 1. ONLY PAPAMETERS DETECTED IN AT LERST DRE SAMPLE ARE SHOUN ABOUE.
- 2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED. (* SIGNIFIES MICROGRAMS/SQUARE INCH)
- 3. "NA" SIGNIFIES NOT AMALYZED.
- 4. "NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT .

RUDGER, INC. - FOROS, NEW JEPSEY SUMMARY OF SOIL SAMPLE AMPLYTICAL RESULTS MERA "O"

COMPLE POINT	1 03 1 30°-36°	: 05-6	: 08-9	! 010-12					
•	30°-36			. 410 15	: 013-15	: 016-18	019-21	022-24	025-26
•	막맛빛) 아이 얼룩 좋은 보	: 30"-36"	:30"-36"	:30*-36*	1 6"-12"	: 24"-36"	: 24*-36	24*-30*	16"-24"
opoope, on the same of	1	. Repres	*********			*			
FRIMEITY POLLUTANT WOLSTILE WESANIOS:			. '						
BE4 TENE Be4 Tene	MD	MO	140	MO	NO	NC	MO	0.95	MD
TOLUCINE	ND	0.12	NO	NO	NO	NO	ND	0.04	us
SELVE TO SELVENT						İ			
 इ.स.टुर रम्) व्या <u>शि</u> ष् Pela "भट्टिसर् ड	ND .	MO.	in in	MO	NO	1.70	MO	ΝŪ	พกู
ggagro y Flyggren THENE	40	NC:	MD	MC	40	1.60	MO	ЭM	MO
i Çngire gr eveçn E	яŪ	NC	ИĈ	NO	й с	2.00	N(·	NŬ	NÇ.
nts Chelmolderalls Christiae	1.90	1.90	NC	2.00	2.00	5,40	1.40	HC:	หมั
ronal ignahi kanalari	40	NC.	MD.	MC	ИC	4.40	NC	N(.	યદ
(FEW ENE	MD	NO ,	NO	NC	МÛ	1,4n)	MC	МŪ	ħΩ
CONTRACTORNE	no	NÇ	NC:	NG	NO	10.00	1.20	и <u>С</u> :	20
INEROTILO, Z-det PrPENE	ND	NO	NO	NO	NO	11.00	NC	NC:	иÇ
CHEMMA CHRENE	MO	NO	NO	MD	NO	1.30	NC	MD	MD
Program	ND	140	% 0	NO	MD	8.90	NO	NO	MO:
्रिमका असर्तुः दृत्तानकाममृद्धः । 						•			
Call DE	2.40	2.70	5.50	9.30	5.50	7.30	2.70	4.20	3.30
(위 실제[[호]	4.60	5.30	4.50	7.50	7.20	7.60	7.00	6.30	4.50
' -ह भार्'ड	0.40	0,29	0.23	5.10	1.30	1.70	0.94	1.20	4.00
TOTAL PHOSPHATE	1800.00	3000.00	2990.90	3600.00	1200.00	140.00	800.00	100.00	470.00
APCENTÓ	110.00	91.60	100.00	63.00	42.00	47.00	36.00	77.00	170.00
SERVILION	1.10	1.30	NO	1.30	NO	NO.	110	1.10	2.70
`ADRLUM	1.50	2.30	2.00	1.40	1.80	0.28	1.20	1.80	4.20
ianger (m	150.00	170.00	150.00	140.00	33.00	16.00	\$5. 00	•110.00	260.00
COPFER	300.00	430.00	240.00	390.00	40.00	36.00	200.00	220.00	470.00
LEA0	72.00	120.00	ನ.00	%.00	29.00	220.00	150.00	190.00	340.00

MUDDEX, INC. - FORDS, NEW JETSEY SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS REER "0"

SAMPLE AREA	1				0				
SAMPLE POINT	03	05-6	; 06-3	: 010-12 :	(113-15	: 016-18	019-21	: 021-24	025-2-
SAME, E DEFTH	367-347	30"-36"	: 30"-36"	: 30"-36" ;	£ " - 12"	; 24"-34"	1245-747	.24" 7"	
**************************************	; fø					,			• • • • • • • •
INCE WHIC COME HINGS:									
meacury	0.16	0.27	0.67	0.55	0.55	0.65	0.66	0.60	N',
NICKEL	21.06	26.00	15.00	24.00	11.00	3.4	17.00	22.00	30.0
seveniom	1.40	N(:	1.40	NC:	NE:	1.20	1.70	N;	420
SILVER	Ú 44	1.40	0.84	1.9C	2.30	0.27	0.30	0.25	C. 3o
THELT UM	N;	Nζ	14.	N,	120	Νŗ	MC	n:	N(
zinc	117.46	247.00	71.00	176.00	g Tale of the	Şir yêr	1." .	15.	
in dita	N.II	, Nŗ	81	NE	N,	***	N;	10"	K.
Harara	1.31	N(Νį	0.12	N'	N.	N;	N',	h.
	N[1.10	0.5	N;		N.	N;	พรู	N;
:, 1-117	N;	1.51	0.45	N(N;	N.	NŢ	••	*.
A 240	₹ 15	1,10	0.23	NL 🧠	N(. N.	N;	• • • • • • • • • • • • • • • • • • •	 Ni

^{1.} ONU! PREAMETER: DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN MB. E.
. H 1 UNLEATERTIONS IN HARTS REP MILLION LUNLESS OTHERWISE INCS ATES.
. NO SIGNOFIES NOT DETECTED: SINCE DESECTION LIMITS WARK, SEE ANALYTICAL DATA SHEETS REVISED IN ATTAILHES.

SAMPLE POINT	P1-2		P3-	4	; P5-	•	; P7-	6
SARPLE DEPTH	0"-6" ;1	e"-24° ;	0"-6" :	 18"-24"	: 0*+6" :	18"-24"	: 0"-6" ;	 18"-24°
PERMITTING REPORT OF PROPERTY.								
PSRAME TEP: S ONLINEA TODA «MONOCA HODOBULA HO	•				٠			
RIORITY POLLUTANT								
CLATTLE OPERATOS:								
ETHYLENE CHLORIDE	NA	0.24	MA	0.26	MR	31.00	MA	0.45
•								
PINBITY POLLUTANT MSE MEUTPMLS:						•	•	
A CONTRACTOR OF THE PROPERTY O								
enzoga) pyreme	OM	NA	1.80	- TAN	160	MA	MD	NA
enzorbak) f <u>luc</u> kpathene	MD	NA	1.50	RR	MD.	RR.	, ND	MA.
ISKE-ETHYLHEXYL) HTHALATE	MD	NA	2.70	RA	4.60	MA	MD	NA
#20##05##05 01##9640# ###################################								
YANIDE	1.10	NA	0.92	M P	1.80	MA	0.57	WA
- (UNITS)	4.50	MA	4.40	- MA	4,40	98	4.90	₩.
	2.50	NA	16.00	MA	3.59	NA.	0.27	WA.
PSENI (240.00	NA	76.00		180.00	MA	230.00	
								•
ADMIUR 		NA 	40		16.00	4 A	MD 	
ж20 М) (М 	250 .(1)	NA 	360.00	- NA	210.00		249.00	NA
PPER.	334 .59	46	474.00	MA.	247.CO	46	(م) . وسر	NA
Ar.	279.00	RA.	535.90	NA 	291.00	щp	\$26.00	NA
twry	e. 90	NP.	5.70	MP	7.20	46	7.50	NA.
WEL.	£7.00	46	54.00	MH	3.0	46	75.75	38
Lets in	1.29	N÷		RA	0.72	Ne	9,48	4 6
		N.C.						
TEV ER ,	23.70	NF	38.05 	MP	4C 	4F		, NF
et.	190.00	9A	296.56	NA 	155.79	RA	14-51,00	M.
4-3/50 	0.13	4A	0.29	NA 	Ú.16	RP	0.29	N-
1-0pc	0.66	MB	0.15	NA	0.10	MP	0, 10	RG.
4 007	0.:4	MP.	0.30	MF	NC	46	۱C	76
HANTEL CHOFFILE NOTE: SEEDIF								
GANTO FRACTION :								
ETONE	MA	2.00	18A	0.24	MA	0.4	MA	0.10
4-01 0X 0%	MP	MD.	MA.	MC	MA	0.01	NA NA	MD
THE S	NP ·	0.07	MA.	0.02	MA	0.20	' M	NO NO
Benton Stab Ch								
raming o brig he re Humhig exteactable o								
40110M5-:								
santhethylaciskaa Panans	MC	NA ·	1.10	MA	1.10	NA	MD	RA
OFFICARBONI (TOTAL)	140.09		191.00	 Nn	217.09	NA	109.00	MP.
Milani Torin		• · · ·		:				
- • · · · · · · · · · · · · · · · · · ·	12.00	MA	11.00	MH.	6.50	MÁ	5.50	Me.

ALL COMMENTARIONS IN PARTS PER HILLION UNLESS OTHERWISE INDICATED.
 THAT SIGNIFIES HOT AMALYZED.
 THAT SIGNIFIES HOT DETECTED: SINCE DETECTION LIMITS WARY, SEE AMALYTICAL DWTH CHESTI PROVIDED IN ATTRIMENT

TABLE 18			OF SOIL SA	DI, NEW JE MFLE ANALY		CI
SAMPLE AREA	Rà serrent es	*******	*******	(; ********	****	
SAMPLE POINT	Q1-2	23-4	: 05-6	. 07~€	; 0 2-10	[34499944444444]
SAMPLE DEPTH	0"-6"	: 0"-€"	1 0"-6"	; 0"-t"	0"-6"	
gooarbangganggangg hut malifa: programmenggangganggang	N.	***************************************		AN 8 4 4 5 5 9 9	*********	SUGGESTED PLANT : TOLERANCE LEVELOS
INGPRANTS COMPORAGE: BREADBASE PRANTS	4.11	4.0:	4.5e	7.75	7.76	
BNT I TIGHT	6. aŭ	€.50	:5.00	29.00	14.00	
RESENT(40.00	. 48.00	150.00	5.70	t.59	2.00
BERY, LT JR	0.50	6.60	Ç. 9 0	1.70	2.09	
(A(P) of	0.40	(.66	1.19	1.4	1. 2	3.00
Ent out in	43.00	44,00	121.06	710.01	39,00	
COLETE	170.00	170.00	370.00	500.00	520.00	150.01
LE4!	220.00	170,00	er, in	450.00	340.01	10,00
MERCHAN	0 .5 0	0.24	0.65	0.24	(.4)	•••
NITHEE	-17.00	16.00	41. 90	95.00	64.5.	3.00
SELENIUM	1.30	(1.98	1.30	0.71	1.20	***
SILVEF	(0.70	1.20	1.50	2.10	1.40	
THALLIUM	<4:00	<4.00	⟨4,0€	12.00) <4. 00	
ZINC	69.00	78.00	280.00	960.00	560.00	300. 00

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATES.

^{3. &}quot;NA" SIGNIFIES NOT ANALYZED.
4. "NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS MARY, SEE ANALYTICAL RESULTS PROVIDED IN ATTACHMENT.

		BEEN .G.		MPLE HEMLY	IICME MESO	.
SHELE BEE	ian sheng	********	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Ε - 4 π - 5 π 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		### > # # # # # # # # # # # # # # # # #
SAMPLE POINT	: 01-2	: 93-4	: 05-6	: 07-8	: 03-10	; >
SAMPLE DEPTH	: 0*-6*	: 0°-6°	: 0'->*	: 06-	: 0~,"	:••••••
PRO SMETER :	:		. ••••			ISUGGESTES PLANT ITOLERANCE LEVELS
INGPORMED COMPOUNDS:	4.11	4.01	4.56	7.75	7.76	
AKT Imple	e.9i)	8.50	15.79	24.00	14.00	
AF : ENIC	40.00	. 4€.00	្រះ្លះ	ją 5. 70	6.50	2.00
BERYLLIUM	0.50	0.50	0.30	1.76	2.00	
CHOTO IM	0.40	0.66	1.24	2.40	1.35	3.00
これのできる	47.00	44.1)()	105.00	710.00	30.00	
COPPER	170.00	176.00	373.00	500.00	'520.0K	150.0
LEAD	229.00	170.00	44%,00	450.00	340.00	15.00
hercury	0.50	0.24	0.65	0.24	6.4	

4:30 - 95.00 - 64.00 - 7

0.71

2.10

12.00

860.06

1.40

300.00

<4.00

MUCOEX, INC. - FORDE, NEW JEFSEY SUMMERY OF SOIL SAMPLE AMPLYTICAL RESULTS

16 . OC

0.45

1.20

<4.00

78.00

1.39

1.50

(4.90

260.00

SELEHIUM

SILVER

THREETUR.

ZINC

TABLE 19

17.00

1.30

40.7Ú

(4.00

69.0C

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

^{2.} ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INCICRTES.

^{3.} THAT SIGNIFIED NOT RHHLYZED.
4. THOT SIGNIFIES NOT DESECTED; SINCE DETECTION LIMITS WARY, SEE AMALYTICAL RESULTS PROVIDED IN ATTROHMENT

TROLE 20

MUODEX, INC. - FORDS, NEW JERSEY
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
GROUP II AMALYTICAL SCHEDULE

WELL DESIGNATION :	B-3 · 1	B-4 :	B-7S			: B-80							285 1	280 1	305 1		315		1, 335
nni maamanamamanamanama Parameters (Group II): Waamanamamamamamam		ima na Kirak	indaminana		mum mum mum	Maria in Maria in Maria in Maria in Maria in Maria in Maria in Maria in Maria in Maria in Maria in Maria in Ma		MAN M D 4 M M M M M M	经收益 医电子 医电子	ARRENE PRO	rek rekere	**********	MIN M M M M M M M M M M M M M M M M M M	**********	i na marka kak	Man and An	Harman Hand	r Herry Park	HANNANAN KI
ARSENI C	KD	II D	MD	NO	0.01	NO	NO	140	ND	ND	MO	140	NO	· ND	0.01	ND	MD	ND	
BAR I UN	0.07	#0	0.06	0.02	0.03	0.06	ND	0.03	ND	0.03	0. u3	0.14	0.04	0.09	0.10	MD .	0.03	0.83	0.06
COLIFORM (COL/100 MILLILITERS)	ND ;	NO.	MD	NO	MD	NO	2.00	140	50.00	2.00	NO	140	NO	MD	MD	NO		>1600.0	240.80
CHL OR I DE	40.00	100.00	150.00	450.00	220.00	600.00	110.00	120.00	90.00	110.00	130.00	2811.00	240.00	25.00	440.00	160.00	1200.00	1300.00	1200.00
ENDRIN	MD	. 10	MD	MD	NO	ND	HD	10	NO	ND	HD	140	HD	HD	MD	MD	MD	100	MO
FLOURIDE	0.31	0.19	0.62	1.20	1.30	1.20	0.45	0.67	0.37	0.48	0. 18	0.58	0.46	0.41	0.89	1.10	1.40	0.67	4.30
OROSS ALPHH (pc1/l1fer>	6.30	2.00	Ю	ND	MD	NO	3.40	140	10.00	11.00	3.80	13.00	4.00	1.30	8.90	3.40	MD	7,90	27.00
GROSS BETA (pc1/liter)		11.00	8,80	18.00	32.00	26.00	140.00	18().00		160.00	8.70	29.00	16.00	3.10	34.00	9.50	45.00	87.00	78.00
IRON	33.00	46.00	40.00	51.00	11.00	66.00	NA	149	0.51	0.52	7.80	40.00	7.50	4.70	39.00	16.00	0.71	15.00	ب -
LEAD	MD	0.009	0.05	100.0	0.008	0.009	0.73	140	MD	NO	MD	140	NO	0.009	0.06	0.006	NO	10	
SEL ENI UN	NO	IID	М	NO	MO	MD	ND	140	NO	ND	Ю	140	NO	МО	MD	. MD	MD	110	FU
LINDAME	ND	IID	NO	ю	MD	NO ·	Ю	110	ND	NO	NO	140	NO	MO	MD	MD	MD	10	10
MANGAMESE	1.80	1.30	11.00	0.67	0.83	2.20	0.03	0.31	HO	0.04	0.24	1.70	NO	0.11	1.60	0.18	0.17	0.4	0.39
SODIUM	19.00	50.00	48.00	110.00	170.00	330.00	82.00	130,00	65.00	120.00	71.00	21.00	120.00	14.00	90.00	44.00	2800.00	97.00	1200.00
METHOXYCHLOR (MICROGRAMS/LITER)	ND	100	MD	HO	MD	. NO	MD	140	NO	MO	MO	140	NÛ	NO	MO	MD	MD	ю	MO

مسلفت

THBLE 21 MMODEY, INC. - FORDS, NEW JERSEY SUPPLRY OF GROUNDWATER MINLYTICAL RESULTS GROUP III AMALYTICAL SCHENULE 限減時期限期的情報を表示する。 このでは、までもないでは、までもな 1 8-5 1 8-4 1 8-65 1 8-70 1 8-75 1 8-70 1 8-75 1 8-70 1 8-75 1 8-70 1 8-75 1 8-70 1 8-75 1 8-70 1 778 WHILL BEST CHAFTON 限時間を指数を表示を表示を表示というによっているというによるとはようですが、できょうには、現代を表示を表示を表示を表示というによっているといっているというによっているといっているというによっているというによっているというによっているというによっているというによっているというによっているというによっているというによっているというによっているというによっているというによっているというによっているとい PERPETERS (GROUP HIEM) CHAPPENDA PORTER STREET PRIMPLEY POLLUTANT UCLATILE OFGAMICS: Rehitschen gebernich HBENEENE 129.00 . 170.00 CHROOM FETPROMEOPIDE 229.00 CHL PROPERTIENE 620.00 619.20 673.00 1:0.00 24.00 310 22.00 110 240.00 X CH1L@POFCR# 27.00 29.0077610.00 & MO 4000.00 1000.00 0.00 5.00 27.00 1.2 DICHLEFOFROPYLENE 9.00 m RЭ ND MD MD . ETHYLSENZENE MD MD 6.09 :9.00 MD P.O 7.00 5,00 69.5 METHOLENE CHLORICE 9.00 MD 5.00 13.00 HO TETRACHLORGETHYLENE ÞΟ MD TOURSE 19000.00 15000.00 16.00 1:00.00 679.00 ND 11.00 MD 370.00 200.00 K9 13000.00 720.00 ₹24.0 24.00 % TEAMS 1,2-DICHLORGETHYLENE PROPERTY POLLUTANT **MOTO EXTRACTABLES:** ************* 4-CHL090-3 HETH LPHENIL 10 2,4-DIRETHILPHENOL 10 2500.00 4 215.00 STA NO

,

2

TRELE 21 continued MUDGER, INC. - FORDS, NEW JEPSEY SUMMARY OF BROUMDWATER AMALYTICAL RESULTS

GROUP 131 AMALYTICAL SCHERALE

PARAMETERS (GPOUP III);															3									·. •			
PPIORITY POLLUTANT BASE MENTPILS; BASEAGE FAREAGER BIS (2-ETHYLMEXYL) PHINGLATE	WD.	MD	Charles C	e mb	ND	מת	ND _f	ИĎ	MA	MA	ĦA	ND	нД	Ю	ю	io	140	4 5D	KO	ю	ко	М	, ND	ĸ	, ND	Nú	10
1,2-D1CHLOROESHZENE	NO	KØ	#D	NE.	44.00	41.00 .	KD	ND	tiA	HA	MA	ND	КО	ю	KD	10	10	#Ø	19	СИ	119	НD	KD	ND	ю	10	10
1,3-DI CH. OKOBERZENE	10	KD	ND	KD	NI.	ĦD	Kfr	ND	NA	MA	MR	MD	KD	HO	19	100	100	NO	KĎ	40	פיו	160	КĎ	HG.	ю	160	10
1, 4-DI CIC OR OPENZEME	MD.	ND	MD	ND .	40.00	46.00	HD ,	ND	ltri	NA	NA	ND	ħD	ю	10	MD	NO	NO	NO	KO	KD	10	КО	ю	10	Ю	ю.
I SOPHORONE	ND	ND	ND	ND.	ND	MD	MD	MD	MA	MA	MA	ND	MD	ю	ю	ю	ND	Ю	Ç4	ND	КD		190.00	100	HĐ	HĐ	10
PRIORITY POLLUTANT METRES: PREIMONN (PPN)	ю	MD	ĦĎ	ND	ю	ND .	HD.	ND	. 168	Nk	MA	MP.	Mú	H0	ю	() ()	NO .	MD	KD.	MD	NO.	Ю	ND	NO	ю	ю	ИD
N'SERIC (PPID	10	KĐ	~0.20°15	₩	140	NB	0.01	NĎ	Nix	Nh	D.(M	0.02	0.64	10	100	10	NE.	ND.	KŮ	160	100	ю	C.01	100	ю	KD	0.09
RRELUM «PFHD	0.07	KD	0.03	0.02	0.0.	6.02	0.03	0.04	HA.	MA	ND	MO	MO.	MD	0.03	ю	0.03	HOR.	C.03	6.14	6.04	0.09	0.10	10	0.03	0.03	6.06
chid unings	ND	MD	MD.	MD	ю	MD	KD	0.02	HA	NA.	KD	MD	MD	160	90	PO.	100	нр	ND	rap	MD	HD	ю	160	ю	ю	ю.
091ER 491D	100	KD	MD.	ND	Ю	esD	MD	MD	MA	MA	MA	NĎ	KD	10	10	10	MU	Ю	6.03	ю	NO ·	140	MD	Ю	ND	ю	ND.
EAD (PFH)	X 0	0.009	MD	ND	0.05	0.007	0.008	6.009	MA	NA	MD	K U	ND	- T. Con	100	. 10	NO.	ND	KD.	HD	Ю	0.009	0.06	0.006	, HD	10	
IANGANESE (IPPID	1.00	1.50	1.70	0.09	11.60	0.67	0.03	2.20	NA	NA	0.16	0.11	0.28	0.03	0.31	10	0.04	NA	C.24	1.70	NO	0.11	1.60	0.16	0.17	0.46	6.39
ICIEL (PPE)	0.02	ND	C.03	160	HD	0.04	KD	MD	HE	N6	Me	HC	MD	Ю	100	160	140	ND	KD	0.08	КО	140	0.07	HD	Ю	0.16	10
ELEKTUT (FAN)	MD	MD	MD	MD	ND	ND	ND	MD	MA	MA	no	ND	NF.	Ю	KD	H	Hu	NA	KĎ	ND .	КО	Ю	Ю	10	NO	NÓ	0.01
THC (FFR)	0.53	MD	1.40	0.02	0.64	0.14	0.05	0.07	NA.	#A	NA.	HD	0.08	0.03	0.06	ND	0.03	0.02	C. 02	2.30	10	C.0-4	0.63	0.07	NO	0.09	0.03

SURPLY OF GROUNDLA'ER AMALYTICAL RESULTS continued GFOUP III MARLYTICAL SCHEDULE ямя и мухри рой рой рой со чам разло и и ра чал рой по при мини кай рай и вы mrrfrrmvan graf of for the graft of the coldest of 1 6-3 1 8-4 1 8-65 1 8-60 1 6-75 1 8-70 1 6-85 1 8-80 1 178 1 178 1 178 1 228 1 258 1 258 1 258 1 258 1 258 1 258 1 258 1 258 1 26 1 275 1 265 1 280 1 305 1 305 1 315 1 325 1 335 1 WELL DESIGNATION ADSCRIPT OF THE OWNER OWNER OF THE OWNER OWNE PREMETERS (GROUP III): MAN PERSON NAMED AND PARTY OF PERSON ADDITIONAL REQUESTED PREAMETERS: and Speed to catholic nation CHLORSTOLUESE £740.00 - 410.00 - \$20.00 gc XYLENE " 20.00 27.250.00 120.00 FORTKLDENYDE -20.00 · 9 610.00 / 930.00 > 1500.00 / - 60.00 // 190.00 4C0.00 130.00 440.00 30.00 40.00 560.00 260.00 1000.00 110.00 340.00 / 110,00 / 1103.00 / 76.00 CYANEDE 100 10 BELEIC RHEYDRIDE ĦĐ 10 · NO 色 **K3** M TEAMS 1.3-Ю Ħ 140 DICHLOROPPOPYLENE -----BHI Ħ PUTYLBENZENE F M/A RETWALETHYL METORE 240.08 FØ LIBRARY SEARCH DEOMHICS WOLATILE OF GRILL FPACTION: *********** CHI_OROTO: UENE 570.00 14470.00 7290.00 7.00 810.00 7.00 210.00 1300.00 34.00 OI - AND FRI -CHLOKOTOLUENE XYLENE WD : 510.00 ND 10 DEN ZALDENYDE MS 9680.00 13.00 15+0.00 Ng. RD - 120.00L 100 RCETONE 19.00 190.00 10

TROLE 21

HUDGER, INC. - FORDS, NEW JERSEY

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA A - BACKGROUND AREA NUODEX INC. - FORDS. NEW JERSEY

****	****	*****	****
SAMPLE POINT	2A1	282	2A3
SAMPLE DEPTH (inches)	Ø-6	Ø-6	Ø-6
SAMPLE DATE	7/31/87	7/31/87	7/31/87
*****	****	*****	*********
FARAMETER:			•
***		•	
INCREANICS:			
Arsenic	ø. 20	1.0	1.1
Cadmium	- ND	. ND	ND
Chromium	2.9	4.4	6.9
Copoer	18	120	93
Lead	26	180	:90
Ziric	6.3	20	17
PESTICIDE COMPOUNDS:	ND	ND	ND
PCB COMPOUNDS:	ND	ND	ND

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (DSM). "ND" - NOT DETECTED: SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 17A SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - DRY WEIGHT AREA B - WEST LAKE NUODEX INC. - FORDS, NEW JERSEY

********************	********	*******	*****	*******	******	******	**********	******	******	****	*******	***	*********	*********	*******	****	*******	****	*******		*******
SAMPLE POINT	581	• 58	5	2B3	•	2B4	• 2B5	•	286	•	287	٠		297		•	588	•	589	٠	2910
SAMPLE DEPTH	• GRAB	• 6RA	8 +	GRAB	• 6	GRAB	• GRAB	• .(GRAB	٠	GRAB	٠	TOP	MIDDLE	BOTTOM	•	GRAB	•	GRAB	•	GRAB
SAMPLE DATE	• 8/12/87	• 8/12	/87 •	8/12/87	• 8/	/12/67	• 8/12/87	• 8	/12/87	٠	8/12/87	•	8/12/87	8/12/87	8/12/87	٠	8/12/87		8/12/87	•	8/12/87
PARMETERS	•••••	********	******	*******		******	**********	******	******	••••	********	4440	••••••••	***********	444444444	••••	*******	****	********	****	*******
######################################	••							-													
INORGANICS:																					
Arsenic	58. 6	a	. 0	58. ●	3	43.0	* F50.7	A STATE OF	44.0		22.0		2.0	1.3	ND		7.1		31.0		23.0
Cadeiun	9.8		. 3	92.●		8.6	11.0		12.0		8.2		3.2	ND	0.5		2.0		8.5		6.9
Chromium	380.0	6	. 8	3.5		220.0	_ ₹350.07	7	46 8. 9		310.0		22.0	12.0	17.0		66.0		270.0		248. 0
Copper	6 00. 0	10	. 0	730.0	1	/50.0	200. O		930.8		550.0		94.0	9.0	6.5		210.0	· F-	530.0		340.0
Lead	560.0	22	. 0	560.0	:	500. 0	₹ 800.0 å	-	720.0		510.0		74.0	16.0	15.0	•	169.0		520.0		480. 6
Zinc .	2000.0	51	. 0	2500.0	22	200.0	₹26 80.0 7	. 21	8 86. ģ		16 00. 0		70.0	9.3	1.6		460.0		1886. 9		1460. 8
VOLATILE ORGANICS:				-									,								
Chlorofore	NA	N		ND		NA	NA		ND		8.2		NA	NA	MA		NA		NA		ND ·
PRSE/NEUTRAL ORGANICS:															٠.,						
Bis (2-Ethylhexyl) phthalate	NA	ND		34.0		NA	MA	;	72 0. D		ND		NA ·	NR	NA.		NA .		NA		ND
Di-n-Octylphthalate	NA.	N		MD		MA	NA		11.0		ND		NA	NA	· NA		NA	,	NA .		ND
BASE/NEUTRAL PRIORITY																					
POLLUTANT TOTAL	NA	NE	t	34.0		NA	, NA	,	731.0		ND		NA	NA	MA		NA		NA		ND
EP TOXICITY COMPOUNDS:	NA	N ^c		NC.		MA	NA		NA .		•		NG.	NA	NA NA		NA ·		NA		NG

ONLY PARAMETERS DETECTED IN AT LEAST DNE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NA" - NOT ANALYZED.

[&]quot;" DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLOROTOLUTENE WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE DRGANIC FRACTIONS.

CHLY THE RASE/NEUTRAL RESULT IS REPORTED.

TABLE 178 SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - NET NEIGHT AREA 9 - NEST LAKE NUODEX INC. - FORDS, NEW TERSEY

******************	******						*******	***	********	•••	*******		******		********	*******	********		*******		40440000		******	
SAMPLE POINT	• 291	•	202	•	203		284	•	285	•	286		297	•		287		٠	288	٠	299	•	2810	
SAMPLE DEPTH	• GRAB	•	GRAB	•	GRAB		GRAB	•	GRAB	•	GRAB	•	GRAB	•	10P	HIDDLE	BOTTOM .	•	6RAB *	•	GRAB	•	GRAB	
SAMPLE DATE	+ 8/12/87	•	8/12/87	1	8/12/87	,	8/12/87	•	8/12/87	•	8/12/87	•	8/12/87	•	8/12/87	8/12/87	8/12/87	•	8/12/87	•	8/12/87	•	8/12/87	
PARMETERS	•	****	•••••					***	•• ••• •••		,	***	********		*********				********	****	******	••••	*******	

INORGANICS:							•																-	
																-								
Ansenio	7.5		1.6		8.8		9. 0		6.5		5.3		3.8		1.3	1.1	ND		3.2		4. 0		3.8	
Caonium	1.3		0.2		4.4		1.8		1.4		1.0		1.4		2.0	ND	8.4		. 0. 9		1.1		1.1	
Chirch cust	49. 0		5. 3		52. 9		46. 8		E46.03		55.0		53. 0		14.2	10.0	13. ●		30.0	•	35, 0		38. 0	
Соррен	78.0		8.2		119.9		157.0	ં ₹	¥452.●	-	112.0		93.0		59. €	7.4	5. 1		93. 0		69. 0		55. 0	
Pac	73. 🤁		17.4		85. 0		106.0		164. 6		87.0		86. 9		46. 0	13.6	11.6		70.0		68. 0		77,0	
7.nc	257.9		16. 1		379.0		§73. €	5	336.0	ř	1 .546		268. 0		44. 0	7. 6	1.3		209. 0		238. 8		556.0	
VOLATILE ORGANICS:																			- '					
Cateroform	NA		. N D		ND .		MA		NA		MD		ND		NA	MA	NA		NA		NA .	*	ND	
HASE/NEUTRAL DREAMICS:																							٠	
Bis (2-ethylhexyl) Phthalat	e NA		ND		5. :		MR		NG.		86.0		Ю		-	NA	NA		MA		NA .		ND	
D. < Octylphthalate	MA		ND		MD		NA.		Kβ		1.3		ND		100	MA	NA		NA		NA		ND	
FIRST/NEUTTAL PRIDRITY	****								******															
POLILIFANT TOTAL	NA		CM		5. :		NA	-	V A		87.3				, NA	NA	NA		NA	•	MA		ND	
IT TOTATION COMPOUNDS:	NI		NA NA	41.	MG.		NA		NA.		NA		•	•	¹ NA	NA	NA		NA		NA .		NA	

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

NO" - NOT DETECTED; SINCE DETECTION LIMITS MARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

ING - NOT ANALYZED.

^{**} DENOTES CONCENTRATION LESS THAN EOR MAXIMUM LEACHATE CONCENTRATION.

WHEN CHOPPICED WE HAS DETECTED IN HITH THE BASE/NEUTRINE AND VOCATILE ORGANIC FRACTIONS,

THE THE CHEST / WELL WITHER SERVEY TO.

TABLE 18A SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - DRY WEIGHT AREA B - MIDDLE LAKE NUODEX INC. - FORDS, NEW JERSEY

**********************	**********			********			*****			• .
SAMPLE POINT SAMPLE DEPTH SAMPLE DATE	• 2811 • GRAB • 8/12/87	1915 8/12/ 87	2811 HIDDLE 8/12/87	BOTTOM B/12/87	• 2812 • GRAB • 8/12/87	• GRAB	• GRAB	• SRAB	2B16 GRAB 8/12/87	• 2017 • GRAB • 6/12/87
PARAMETERS	•		**********	***********	**********	••••••	*********	**********	**********	*********
***************************************	••			•						
!NORGANICS:										
Arsenic .	29. ●	.39. €	7.3	1.2	29. 8	14. 0	16.0	11.0	28. 0	29. 0
Cadesum	11.0	5.3	1.0	, MD	52.0	10. €	11.0	9. 4	10.0	9. 1
Chromium	29.0	43. 0	12. 0	11.0	22. 0	31.●	31.0	29. 0	29.0	24. 0
Copper	110.0	370. ●	58. 0	3.3	100.0	180. 0	160.0	140.0	150. 0	120.0
Lead	2 90. 0	284. 0	51.0	8.4	220.0	160.0	180. ●	140. 0	140. 8	120.0
linc	370.0	230.0	49. 0	1.2	220.0	560. €	430.0	460.0	410.0	400.0
BASE/NEUTRAL ORGANICS:		*	,					-	,	
Bis (2-Ethylhexyl) phthalate	, NA	, MA	NA	MA	48. 0	NA .	MA	116.0	990. €	120.0
EP TOXICITY COMPOUNDS:	•	NQ .	160	144	NA	NA	NA	NA	MA	NA

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

[&]quot;ND" - NOT DETECTED; SINCE DETECTION LIWITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B. "NA" - NOT ANALYTED.

[&]quot;" DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLUROTOLIENE MAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE DREAMIC FRACTIONS,

ONLY THE BASE/MEUTRAL RESULT IS REPORTED.

TARLE 188

SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - HET WEIGHT

AREA R - HIDDLE LAKE

NUODEX INC. FURDS, NEW JERSEY

SAMPLE DEPTH	• 2911 • 58AB	100	2811 2811	BOTTOM	ERIE FARR	• . 2B13 • GRAB	• 2014 • GRAB	* 2B15	4 2816 4 GRAB	• 2B17 • -GRAB
SAMPLE DATE	• 8/12/87	• 8/12/87	8/12/87	8/12/87	8/10/87	* 8/12/87	8/12/8 7	8/12/87	• 8/12/87	• 8/12/87
PATAMETERS	•									*************
***************************************	••									
INDRGANICS:										
Arsenic	3.5	6.3	5.0	NÓ.	3.8	1.7	2.4	1.9	4.9	6.4
1.303140	:.3	1.1	9.7	ND	2.8	. 1.2	1.7	1.6	1.8	2.0
Chromon	3.5	3. 0	8. 1	3.4	2. A	3.7	4.7	5. 9	4.9	5. 4
Coppen	12.6	77.0	40. •	2.8	13.6	21.3	24.6	23.4	25.6	27, 2
itaC	23.7	58. 0	35.0	7.1	2A. A	22.2	26.7	24.0	23. 4	26.7
7.tu	44. P	- 47.0	3.3.0	1.0	2A. 4	66.6	64.0	78.0	79. 0	87. 9
INSE/NEUTRAL DRGANICS:		-								
Ris (2-Ethylhexyl) phthalati	e NA .	NA	MA .	MA	6.2	· MA	MA	19.7	168. €	26.4
EF TEXTELTY COMPOUNDS:		WE.	NC	'NO	MP	MA .	MA	MA	MA	MA

ONLY PARAMETERS DETECTED IN AT LEAST DNE SAMPLE ARE SHOWN AROVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX 8.

[&]quot;NA" - NO? ANALYZED.

^{***} DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHEOROTOCHEN WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE ORGANIC FRACTIONS,

ONLY THE PASE/NEL THAL RESULT IS REPORTED.

TAB_E 199

SUMMARY OF SECTMENT EDMALE DISCUSTING, TOOL OF THE MEMBER.

MARA B - HARTYELLS TEND

NUCDEN INC. - FCROS. NEW SERVER

*****************			30.0	• • • • • • •	•••••	2010	**********		********	••••	*****		· · · · · · · · · · · · · · · · · · ·		*** ** *	****		• • • • •		****		4000	*******	••••		
SAMPLE POINT	• 2810	-	2019	•	***	28:9		•	286 0	٠	421	•	1982	-	923	٠	5851	•	3657	٠	355.	٠	56 56	٠	5B2.4	
SAMPLE DEPTH	• 570		GRAB	•	TOP	HIDDLE		•	€40₺	•	Cour	•	2458		900		B21128	•	GRAB	•	3776	•	GRAF	•	3338	
SAMPLE DATE	• 6/12	-	8/12/87	• •	8/12/87	8/12/87	8/12/87		0/12/87	•	8/12/87	•	8/:0/67				EV::/E7		P':2'87		61:5167		8/12/87		E 112/87	
***************************************		******	******		******				4100+<++	****		*****	*********	*****	*****	****	*******	****	******	****	1 *******	****	*******	••••	*****	
PARAMETERS	•											•														
***************************************									~																	
									4		,									•	•				,	
INDAGANICS:				>																						,
**********																							~			
Arsenic	72.	.•	59. 🕈		79. 0	MD	10		34.?		41.0		164. 6		95. 6		110		53. P		.65.5		54.		75. 2	1
Code : un	18		19. 0		24.0	40	XD		19. 6		!3. ₽		54.0		13.0		MD		21.0		€. ∂		1 E. P		19. 8	- (
Dironium	520	.●	1200. 0	:	3 800 . 0	8. 9	3. 4		47 0. B		::0.P		5! 2. 6	5	69. P		NO		2400.2		47 0 .0		?78.2		1500.2	
Copper	500	.•	490. 0		650.0	11.0	:.3		178. 8		170.2		33 0. e	3	30. 2		Kβ		61 0. P		: 7 0 . P		260.0		45P. P	
Load	1700		2000.0	1	1400. 0	12. 0	5.4		620.0		920.0		2100.0	1!	PP. 7		40		1400.2	`	1466.6		1222. 8		377.7	
line .	1966	.•	1500.0	:	3600. 0	17.0	7.8		549. 6		510.8		990. 0	12	er. e		4.0		24 86. 6		! 268. 6		9:7.7		\$.582	
VOLATILE ORGANICS:																										
Chlorobenzene	MA		NA		MA	NA	17.0		NA		NA		VA		1 9		15		89		VA		12		. 12	
BASE/NEUTRAL ORGANICS:					٠						-	-					-									
Dis (2-Ethylhexyl) shthalate	NA A		MA		NO	NA	390.0				NA		MA		MA		38.8		N4		\a		5,3		1,3	
Di-n-Butylphthalate	MA		MA		MA	MQ.	20.0		NA.		NA	٠	MA		ND.		75.2		*9		YO.		10		30	
1, 4-Dichlorobenzene	. NA		MA		MA	NA	56.0		¥A		NA		MA		NA -		۸Ü		.c		73		.:		.3	
BAGE/NEUTRAL PRIORITY						,																				
POLLUTANT TOTAL	NA		MA		ND	NG .	466.0		4.5		N/G		MA		NA ·		85. 9		N/O		ay		40		//5	
BASE/NEUTRAL LIBRARY SERRCY:																										1
					ы0.	NO.	. 19 📤		NA.		NO		NA		Y A		٩D		20		40		40		7 0	,
Chlerotolume	NA		161		-184 -	MH	12.0		₩i		***		1991		101		יטוי		\w		714		***		***	
EP TOXICITY COMPOUNDS:	NA		•		NA	MA	' NA		AG.		NA		NA .		NΩ		NO		NO .		ΝÞ		40			

ONLY PARAMETERS DETECTED IN AT LEAST DIE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLIUM (ppm).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;MA" - NOT ANALYZED.

^{***} DENOTES CONCENTRATION LESS THAN EFA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLOROTOLUENE WAS DETECTED IN BOTH THE BASE MEUTRAL AND VOLATILE DAGANIC FRACTIONS,

ONLY THE BASE/NEUTRAL RESILT IS REPURTED.

TABLE 198

SUMMERY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - MET HEIGHT

AREA B - HARTHANNS FOND

NUODEX INC. - FORDS, NEW JERSEY

*******************	 	, , , , , , , , , , , , , , , , , , , 	**********		******	**********	**********	**********	**********			**********		**********	
SAMPLE POINT	2918	• 2919 •		2019	•	2820 •	2B21 4	2655	• 2923 •	2023 4	2P24 •	2825	2826	2027 •	WS-1
SAMPLE DEPTH	GRAD	• GRAB •	10P	MIDDLE	BOTTOM .	GRAB •	GRAB (GRAP (• 58AB	BOTTOM .	GRAB .	GRAD .			POND WATER
SAMPLE DATE .	8/12/87	. 8/12/87 .	8/12/87	8/12/87	8/12/87	8/12/87 .	8/12/67	6/12/87	8/12/87	8/12/67	8/12/87 .	8/12/87	8/12/87		
		• • • • • • • • • • • • • • • • • •	4	**********	*******		*********	********	***********	*********	***********	*********	**********		
PARAMETERS +															- 1
***********************	•														V * 1
INORGANICS:								•							
	MA	MI	-	161		-	, MH	Net	NH.		MH	NA)	w 0	ъ.	
pH Arsenic	11.6	8.8	. 8.7	ND	ND	6.7	11.5	11.5	16.4	NA	8.2	13. 1	9.2	NA 1	,64. ·
Cades un	2.9	2.8	2.6	NO	NO	3.8	3.6	2.7	2.6	NA	2.8	0.8	3. 0	2.7	1,000
Direction	84.8	173.0	421.0	6.5	2.6	95. 8	70.0	56.0	51.0	NA NA	315.0	61.0	47. 0	210.0	~~
Copper	80.0	74. 0	71.2	9.5	1.1	33.0	48.0	36. 0	66.0	NA NA	79.0	22.1	45. 0	63.0	(,)
Lead	273.8	300.0	156.0	6.7	4.4	163.0	259. 0	-236.0	2:2.0	NA .	188. 0	181.0	199. €	253.0	MD
line	160.0	227.0	400.0	12. 4	6.4	109. 0	144.0	109. 0	231.	NA	383. 0	130. €	155. 0	218.0	10
VOLATILE ORGANICS:															٠.
Chlorobenzene	NA	NG	· NA	NO	13.9	MĀ	NA	NA	NA	, ND	NA	MP	NA	NA .	HO
BASE/NEUTRAL DREAMICS:															
Dis (2-Ethylhenyl)phthalate	NA	NA	NA .	NA	320.0	NA	NA	NA.	MA	8.7	14 0	NA	NG	NA	YD.
Di-n-Butylphthalate	MA	NA NA	MA	MA	16.4	NA	NA	NA	NA -	16.0	NA	NA	NA	NO	ND
1,4-Dichlorobenzene	NA	MA	NA	MA	46.0	NA	NA	NA	MA	ND	NA "	NA	4 0	NA	ND .
BASE/NEUTRAL PRIORITY									******						
POLLUTANT TOTAL:	NA	MA	NA	MA	372.4	NG	NA	MA	MA	24.7	NA	VA	NA.	NA	AD
BASE/HEUTRAL															
LIBRARY SEARCH:															يونوه د ۱۳۰۱ يو
Total Dilorotoluene Isomers	NA	NA .	на	MA -	9.3	MA	ŅĀ	NA .	MA	ND	NA	NR	NT	NA	()
EP TOXICITY CONFOLNES:	NA		MA	, NA	NA.	MA	NÁ	NA .	, NA	KO	K Q	NO	NA	MD	ND.

UNLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER HILLION (ppm).

MO" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN AFPENDIX B.

[&]quot;MA" - MOT AND VIER

^{***} DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLOROTOLUENE WAS DETECTED IN BOTH THE BASE NEUTROL AND VOLATILE DAGGNISC FRACTIONS.

DNLY THE BASE/NEUTRAL RESULT IS REPORTED.

TABLE 20

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

AREA D - NON-PRODUCTION AREA

NUODEX INC. - FORDS, NEW JERSEY

DITTE 101111	• 2D3	•	204	•	205	. •	20		•	207	•	2D8
***************************************	• 0-4	•	0 -3	٠	0-6	٠	9 -6	18-24	•	e -3	•	0 -6
AMPLE DATE	• 7/27/ A 7	•	7/27/87		7/27/67	•	7 /27/87	7/27/67	•	7/27/87	•	7/27/8
ARAMETERS	• • • • • • • • • • • • • • • • • • •		*******		*********	****	***********			*********		******
******************	€.			٠								
NORGANICS:		,			,		••					
lercury	NĎ		NO .		, ND		0.09	ND		0.10		0. 20
OLATILE DRGANICS:		e e				•						
in lorobenzene	ND		ND .		0.69		NA	ND		ND		ND
thylbenzene	ND		ND	,	0.21		NA	ND		ND		ND
OLATILE PRIORITY	******			j								
POLLUTANT TOTAL	ND		ND	,	0.90		MA	ND		ND		ND
				£								
BASE/NEUTRAL ORGANICS:												
Inthracene	ND		ND		64. €		ND	NA		ND		ND
is (2-Ethylhexyl) phthal	ate 350.0		8. 0		MD		- ND	NA		210.0		42.0
thrysene ·	ND		ND		45. 0		ND	NA		ND		ND
,2-Dichlorobenzene	ND		4.0		MD		ND	NA		3.0		ND
,3-Dichlorobenzene	ND		2.0		ND		ND	NA		ND		ND
,4-Dichlorobenzene	ND		2.0		ND	-	- ND	NA		ND		ND
Diethylphthalate	ND		ND		ND		ND	NA		4.0		ND
)i-n-Octylphthalate	MD		NB		ND .		ND	NA		5.0		ND
Pyrene	ND		ND		. 8 9. 0		ND	NA		ND		ND
,2,4-Trichlorobenzene	ND		18.0	•	ND		ND	NA		2.8		ND
BASE/NEUTRAL PRIDRITY										_		
POLLUTANT TOTAL	350.0		34.0		189.9		- ND	NA.		224.0		42.0

DNLY PARAMETERS DETECTED IN AT LEAST DNE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NO" - NOT DNO YTED

TABLE 21 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA F - GENERAL PLANT PRODUCTION AREA NUODEX INC. - FORDS, NEW JERSEY

Commence of the second

**************************************	**************************************	************ 575	******
SAMPLE DEPTH (inches)* SAMPLE DATE *	18-24 9/15/87	18-24 9/15/87	54-60 9/15/87
PARAMETERS: *			
INORGANICS:			
Total Fherols	0.30	1.3	0.93
VOLATILE ORGANICS:	•		•
Chloroform Tetrachloroethylene	0.0 6 ND	ଡ. ଡ6 ଡ. ଡ7	0.15 0.03
VOLATILE PRIORITY POLLUTANT TOTAL	Ø. Ø6	2.13	Ø. 18
VOLATILE ORGANICS LIBRARY SEARCH:			
Total Xylene Isomers	ND	0.34	ND
BASE/NEUTRAL DRGANICS:			
BASE/NEUTRAL LIBRARY SEARCH:			•
Chlorotoluene	7.6	ND	4.7

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (DDM).

"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 22 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA G-GENERAL PLANT PRODUCTION AREA NUODEX INC. - FORDS, NEW JERSEY

*****************	*********	*************	**********	**********	***********	************	***********	
SAMPLE POINT	•	261	•	262	• 263	÷ 264	• 26511	26611
SAMPLE DEPTH (inches)	• 18-24	42-48	 18-24 	24-38	6-12	• 12-18	18-24	. 18-24
SAMPLE DATE	• 9/4/87	9/4/87	• 9/4/87	9/4/87	9/4/87	9/4/87	• 9/14/87	+ 9/14/87
****************	*********	**************	*******	***********	**********	***********	************	*********
PARAMETERS	•							•
*****************	•	•						
INORGANICS:							•	
Arsenic	NA	NA.	NA	NA	15	30	3.4	1.6
Chromium	NA.	NA	NA	NA	11	9.8	9. 0	13
Copper	NA NA	NA NA	NA	NA NA	9.5	36	6.4	11
Lead	. NA	. NA	NA	NA	6.0	9. 4	5.4	8.2
Petroleum Hydrocarbons	NA	NA	NA	NA	- ND	26	10000	- 189
Zinc	NA	NA	NA	NA	.32	31	38	96
BASE/NEUTRAL ORGANICS:		•					•	
Hexach lorobenzene	ND	ПИ	2.6	ND	NÚ	On	ND	NÚ
1,2,4-Trichlorobenzene	ND	MD	1.2	MD	ND	ND	ND	ND
BASE/NEUTRAL LIBRARY SEAACH:							•	
Chlorotoluene	ND	ND	267 7	330	· ND	ND	ND	ND

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (pow).

"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

"NA" - NOT ANALYZED.

TABLE 23
SUMMARY OF SDIL SAMPLE ANALYTICAL RESULTS
AREA 1 - MALEIC PRODUCTION AREA
MUDDEX INC. - FORDS, NEW JERSEY

SAMPLE POINT • 211 • 212 • 213 • 214 • SAMPLE DEPTH (inches) • 18-24 • 48-54 • 18-24 • 48-54 • 18-24 • 42-48 • 18-24 •	215 -24 42-48	• 2	16
	-24 42-48		
		• 18-24	30-36
SRIPLE DATE • 9/4/87 • 9/4/87 • 9/4/87 • 9/4/87 • 9/4/87 • 9/22/87 • 9/4	4/87 9/4/87	9/14/87	9/14/87
	*************	***********	***********
PARQUETERS •			
11-11-11-11-11-11-11-11-11-11-11-11-11-			
VOLATILE ORGANICS:			
	ND NO	MD	ND
Chlorobenzene ND ND ND NO 8,98 0.14 ND ND N	ND ND	MD	ND
Chlorofors NO NO NO NO NO NO NO	0.51 ND	NO .	MD:
Ethylbenzene ND 7.7 ND ND ND 0.06 ND 50.4 39.8 76	796. 0 0. 0	5 54.6	84. 0
	0.95 ND	MD	ND .
VOLATILE PRIORITY			
POLLUTRINT TOTAL 8.89 116.7 ND ND 1.44 8.14 50.4 39.6 76	P97.46 0.00	5 54.0	84. 0
VOLATILE LIBRARY SEARCH:			
Tylene 0.27 143 NO NO 2.36 3.4 394 380 116	60 0.6	1 486	330
• • • • • • • • • • • • • • • • • • • •	ND 0.5	3 ND	MD

ONLY PARAMETERS DETECTED IN AT LEAST DIE SAMPLE ARE SHOWN ABOVE.

RLL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

"NO" - NOT DETECTED; SINCE DETECTION LIMITS YARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 24 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA J - DISCONTINUED PRODUCTION AREA NUODEX INC.' - FORDS, NEW JERSEY

•									
	*******	***	********	***	*********	***	*********	***********	***********
SAMPLE POINT +	2J1	•	535	•	513	٠	2J4 •	2J5 ·	
SAMPLE DEPTH (inches) 6	54-69	e	54-68	•	54-60	•	54-68 •	54-60	
SAMPLE DATE +	8/31/87		8/31/87	•	9/2/87	*	8/31/87 •	8/31/67	9/8/67
!* *** *!***************	********	****	********	****	**********	****	**********	• • • • • • • • • • • • • • • • • • • •	***********
PARAMETERS +									

INORGANICS:									
									3
Arsenic .	ND		2.1		ND		ND	ND	NA
Chromium	15. 0		11.0		4.3		10. e	6. 1	NA
Copper	1300.0		47.6		3.2		21.9	18.0	. NA
Lead	34.0		12.0		. ND		16.6	44. 0	NA
linc	46. 0		36. €		6.6		84. 0	36. 0	NA
VOLATILE DREANICS:									•
Toluene	ND		ND		ND		ND	ND	0.34
VOLATILE ORGANICS LIBRARY SEARCH:									
Chlorotoluene	0. 15		0.03		ND		9.14	ND	NŪ
BASE/NEUTRAL ORGANICS:									
Anthracene	420.0		31. €		ND		670.0	ND	NŪ
Bis (2-Ethylhexyl) phthalate	ND		ND		ND		ND	ND	6.●
BASE/NEUTRAL PRIORITY POLLUTANT TOTAL	420.0		31.0		ND		670. 0	ND	6.0

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B:
"NA" - NOT ANALYZED.

TABLE 25 SUMMARY OF SOTIL SAMPLE ANALYTICAL RESULTS AREA K - DRUM STORAGE AREA MUODEX INC. - FORDS, NEW JERSEY

AMPLE POINT	• 2K1 •		2K2		• 2K5	•	2K6		٠. :	2K7	• 2K8 •		20	K9	
AMPLE DEPTH (inches)	• 8-6	0-6	18-24	28-34	# 38-44	0-6	18-24	35-41	₽-6	18-24	# 24-30 #	0-6	6-12	18-24	39-36
RMPLE BATE	• 9/2/B7 ·		6/25/87		• 6/25/87	+ 6/25/87	6/25/87	6/25/87 •		9/2/87	+ 6/25/87 +			6/25/87	6/25/87
**********		********	*****	-	*******			-							
WARPETERS	•				•			,							
********************	•														•
NORGANIC COMPOUNDS:		•		,										•	
ercury	6,0	10	HD	NO	MO	1.5	MO	1.6	2.3	5.2	NO	ND	NA	0.097	9. 0
OLATILE DAGANICS:															
										•••					**
enzene	MA	MA	ND	MD	HO	MA	MED	0. 055	· NA	NØ	ND HD	NA	NA.	NO.	MO
h lorobenzene	MR	MA	0.43	ND .	, ND	МА	MD	MD	NA	MD	MD	MA	MA	0. 026	0.1
hloroform	MA	MA	ND	MO	ND	MA	NO	MD	NA	. M0	NO.	MA	NA	0.062	. 0.1
pluene	MA	MA	9.13	0.054	ND	MA	MD	MD	NA	MD	KD	NA	MA	0.48	2.2
,1,1-Trichloroethane	160	NA	NO	NO	MD	MA	MED	MD	NA ·	ND	MD	MA	NA	9. 643	NO
LATILE PRIORITY				,											
OLLUTANT TOTAL	MR	MA	0.16	9. 954	NO.	·NA .	MD	0. 655	NA	ND	, MD ,	MA	MA	0.611	2.4
DEATILE ORGANICS					,										
LIBRARY SEARCH:															
y) ene	NA	MA	NĎ	ND	ю	MA	MD	9. 85	NA	ND	ND	NA	NA	ND	ND
hiorotoluene	NA	MA	4.9	•	MD	MA	ND	•	140	HD	ND	NA	NA	1.0	3. ●
ASE/NEUTRAL DAGANICS:	•														
levach)orobenzene	MD	MD	MA.	NO:	3	3	MA	ND	MD	MA	MD	ND	MD	NA	NA
rase]neut ra l															
IBAARY SEARCH:															
hlorotolume	NO .	7.3	NA	7	5	11	NA	ND	e. 5	NA:	ND	ND	11	NA	М
ESTICIDES															
HC-delta	ND	ND	NA .	NĐ	2.4	ND	NA	ND	ND	NR	· ND	MD	NA	MA	MD
oxaphene	ND	9.6	MA	ND	MD	227	NA	MD	ND	NA	, ND	ND	NA	NA	ND
eptachlor	MD	ND	NO.	0.50	NO.	ND	NO.	ND	ND	MA	ND)	ND	NA	NA	MD

DMLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER HILLION (pow).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LINITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NA" - NOT ANALYZED.

^{**} DENOTES COMPOUND WAS FOUND IN BOTH THE BASE/NEUTRAL AND VOLATILE ORGANIC FRACTIONS;

TARLE 25
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
AREA L - TRANSFORMER LOCATION
NUODEX INC. - FORDS, NEW JERSEY

**************	******	*******	*****		*******					***********	**********	*******			********	
SOUPLE POINT	L1	T1	•	LT-2	•	LT-3	. •	LT-4	•	LT-5	• 1.T-	6	• 17-	-7	• 2	-в
SOUPLE DEPTH (Inches) #	0-6	18-38		6 18 ⁻ -30	• 0-6	- 18-30	• 8-6	18-30	• 0-6	18-3 0	₽ 0 -6	18-39	• 0 -6	18-30	• 0-6	3 38
SOMPLE DATE .	8/4	4/87	•	8/4/87	•	8/4/87	•	8/4/87	•	8/4/87	• 8/4 <i>i</i>	87	8/4/	187	8 '·	
****************	*********	*******	1244 000 000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	*******	**********	** * * * * * * * * *		********		***********	********	••••••			
PRRIVETER			*													
******		:											•			
PCB Campounds:	NO	MD	M) , NO	MO	MD	NO	MD	NO	ND	٧Đ	ND	ND	MD	ND	ND
	•	5 .														1000

"NO" - NOT DETECTED; SINCE DETECTION LINITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 27
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS
AREA L - DISCONTINUED PRODUCTION AREA
NUODEX INC. - FORDS, NEW JERSEY

AMPLE POINT	• a:	• STS	· Al	• 2L4	• 2L5	•	21.6	• 2	L7	• 2L8	+ 2L9	 SF18 	• SL11	5F15	 ali3 	• 2L14	• 2L15 •	• SL16 •	2L17
IMPLE DEPTH (inches)	+ 54- 60	• 54-6 0	• 54 -6 8	e 24-38	42-48	• 18-24	54-68	18-24	48-54	> 54-6 2	• 36-42	• 36-42	• 36-42	■ 36-42	1 36-42	• 30-36.	· 35-42	18-24	36-42
APPLE BATE	• 9/1/87	• 9/1/87	• 9/1/87	• 9/1/87	• 9/1/87	• 9/1/87	• 9/1/87	9/2/87	9/2/87	• 9/2/87	• 9/2/87	• 9/:/87	• 9/1/87	• 9/1/B7	• 9/1/87	• 9/1/87			
10000100000000010110101111111111111111	••••••	******	••••••	********	••••	******	*********	••••••	********	• • • • • • • • • •	*******	,,,,,,,,,,	********		********	********	********	********	******
100000000			• .													,			
NORGANICS:												-							
rsenic	450.0	240.8	300. 0	1.3	. 2.1	NA	5.8	VA	3.2	NO	7.5	NA	49	NG	NA	· NA	. NA	NA	NA.
admi vm	MD	0.4	2.2	ND	ND.	NΑ	ND .	NA	ND	ND	NO.	NA	×Α	NA	NA ·	NR	NA	NA ·	NA
hronium	150.0	130.0	160. 0	6.3	9.7	120	6. 7	NG	8.6	3.5	6.6	Att.	NA	44	NA	NA	M Fa	va.	VA
opper	350.0	300.0	440.0	4.5	9.●	MA	31.0	NA	26.0	25. €	8.7	7.C	NΩ	NΩ	NA	NA.	NA	NA.	NA
ead	340.0	280. 0	300.0	6.6	170.3	NΑ	63. 2	NA	130.€	830.0	16. 0	13	N4	NA.	NA	NA	NA	NA.	NA
el en i va	5. 1	3.7	4.7	. ND	- MD	%A	МĎ	NA	NA	NA	NO.	NG.	NA T	\A	MA	NA	NA -	NA	NA
inc	219.6	228. 0	570.0	5.7	2.7	MĜ	64. 🛭	NA.	46.0	6.0	:3.0	, va	NA.	/3	SA .	\A	NA.	٧A	٧a
OLATILE ORGANICS:						-											1		
hlorobenzene	ND NO	ND	ND	ND	ND	ND	,ND	0.23	8.69	ND	ND	NA	NA.	NG	NA	NA.	KA	NA.	NA.
hlorotoluene	MA	MA	NA	MA	MA	NA ,	:NA	NA.	NA	NA	: NA	N/A	NA	NA	ND.	ND	ND	ND	NO -
thylbenzene	40	MD	ND	MD	0. 29	ND	ND .	₹.52	9. 74	0.12	ND	NA	\A	NA.	VQ.	NA	NA.	NA .	. 149
etrachlorosthylene	ND	ND	ND	ND	0.13	ND	ND	KD	ΝĐ	ND	ND	NA	NA	15	M	NP.	N A	NA	7 ¢
oluene	ND	ND	ND	ND	0.15	ND	ďΓ	9. 33	0.06	0.03	ND	MA	NA	12	NA.	NÁ	43	*4	¥
richloroethylene	ND	*D	ND	ND	ND	MD	MD	ND	ND .	P. 26	839. 8	NA	NA	7¢	۱	NA.	1 2	ب د	, NA
OLATILE PRIORITY									******		*****						,		
POLLUTANT TOTAL	ND	ND	ND	NO	9.36	NO	CP	:.!8	0.17	2.47	830.0	KA.	*10	MA	·35	V 3	14	NP.	VA
OLATILE ORGANICS LIBRARY SEARCH:							•								,				
ylene	MD	ND	· ND	ND	0.0	40	ND	2.0	2.71	3.61	иD	*:A	NA.	40	% 2	/3	12	\ \$	15
hlorotoluene	\D	ND	ND	ND	•	ND	ND.	e. 7	•	•	•	75	A2	45	12	:.£	3.6	NP	

TABLE 27 (cont.)

SUPPIARY OF SOIL SAMPLES ANALYTICAL RESULTS

AREA L - DISCONTINUED PRODUCTION AREA MUDDEX INC. - FORDS, NEW JERSEY

	*********	. ~ .					*******	-	*********	*******	********		*******	*******		*******			
MPLE POINT MPLE DEPTH (inches)			+ 2L3				L6		AL7		• 21.9	• 2L10	all	• 2015	• ali3	• 2L14	• al 15	• St 16	• 2L17
OPPLE DATE			+ 54-60					# 18-24 * 840487	98-39	* 34~6#	# 36-42 - 840487	1 36-42	36-42	# Jb-42	36-42	4 30-36	4 36-42	4 18-24	4 36-42
1997	* 7/1/0/		• \$/1/ 6 7					• 9/2/8/	3/2/8/										
MAMETERS	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	********	********				*******	*******	*********	*******	*******	********	********	********	*******	********	*******	********	*******
1000000																•			
NGE/NEUTRAL ORGANICS:												٠.							
enzo (b) fluoranthene	NG	NO	NO.	MD	1.0	MA	ND	NA	ND	ND	NÐ	N/A	MA	NA	NA	NS.	MA	MA	MA
mzo (k) fluoranthene	·ND	100	. 10	ND	1.0	NA	MD	MA	ND	NĎ	ND	AM	ND.	NA	NA	NA.	MA	MA	NA
is (2-Ethylhexyl) phthalate	4.0	3.0	84. 0	2.0	2.0	MA	NO	MA	MD	ND	ND	NA	NA	NG.	NA.	NA	' NA	NG.	NA.
TYSANO	MD	ND	NO	MD	2.0	MA	MD	MA	MD	MD	ND	MA	NA	NA	NA	MR	MA	NA	NA
i-a-Butylphthalate	10	ND	2.0	ND	10	NA	ND	MA	ND	ND	ND	NA	NA	W A	NR	NA	NA	NA	NA.
luoranthene	KD	MD	1.0	KD	3.0	MA	ND	NA	ND	MD	ND	NA	NG.	NA	MA	MA	MA	MA	NA
exach l orobenzene	ND	KD.	MD	NO	2.0	MA	ND	NA	MD	ND	NO	NA	· NA ·	N/A	NA	NA	NO.	NR	NA
remant hrene	MD	ND	ND	ND	1.0	MA	ND	NA	ND	ND	ND -	NA	NA.	NA	NA	NA	NA	MA	NA
rene	1.0	ND	2.0	MD	.8.	NA	ND	NA	MD	ND	MD	NA	MQ	NA	NA	NEA	NΩ	MA	NA
2,4-Trichlorobenzene	MD	MD	Ю	MD	3.0	MA	ND	MA	MD	MD	MD	MA	MA	MA	MA	MA	NR.	, MA	MA
NEE/NEUTRAL PRICETTY																			
POLLUTANT TOTAL	5.0	3.0	83. 0	2.0	17.0	NA	MD	MA	ND	MD	MD	MA	NA	MA	MA	NA	NA	Q\$	*4
MAGE/MEUTIML																	,		
COMMENSOR!																			
i larot ol nose	NO	NO	NO	ND.	148	NA	ND	MA	2	15	71	MA	MA	NA	MA	NA .	NA	NA	м.
ESTICIDES:					,			٠											
																	ě		
41-807	NO	MD	NO.	ND	40	NA	ND	MA	ND	. 0.6	ND	NA	NA	NA	NA	NA	. NA	NA NA	VA.
robene	MA	NA	MA	KA	MA	NA	NA	NA	NA	NA	NR	17,600	64 , 800	13.0	NA	NA	MA	NA	NA
Ixaphene	MO	ND	40	ND	1150	NA -	ND	NA	ND	NO.	ND	NA	NA .	NA	NA 	NA	49	: KA	
ITAL SAMPLE CONCENTRATION	ND	ND	OK C	ND	:158	NA	ND	NA	ND .	0.6	ND	17,600	64,800	13.0	NA	NA	NA	NA	:.A

DALY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;MA" - NOT MAKEYZED.

[&]quot;" - WE'RE DILDADIOLIENE WAS BETECTED IN NOTH THE BASE/NEUTRAL AND VOLATILE DEGANIC FRACTIONS, DNLY THE BASE/NEUTRAL RESULT IS REPORTED.

TABLE 28 MMARY OF SOIL SAMPLE ANALYTICAL RESULT: AREA N COMPOSITE SAMPLES - PRIORITY POLLUTANTS NUCCEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	2M-7,18,6 comp.	# 29-4,5,1 comp.	+ 2M-12,2,11 comp.	# 2M-8,9,3 comp.
SAMPLE DATE	6/26/87	÷ 5/26/87	• 5/26/87	+ 5/26/87
**********	*********		*************	
PARAMETERS +				

INDREANICS:	,			
Petroleum Hydrocarbons	: 909	78	170	178. 8
Cyanide	5.5	· ND	D	NC SV
Phenois	a. 2	2.7	. :1	9.7
Antimony	NO	19	2.	7.2
Arsenic	51	78	110	98. 3
Beryliius	0.71	a. 38	5.8	1.2
Cadulus	3. 2	56	11	5.7
Chronius	. 71	138	298	120.0
Copper	130	288	568	399. 9
Lead	99	288	358	248.8
Hercury	1.6	2.9	2.3	2.9
Nickel	15	17	26	17. 9
Selenium	3.4	4.3	9. 1	7.4
Silver	1.7	2.6	3.8	2.9
Thallium	NO	ND	90	3.3
Zinc	98	118	360	130. 8
			, , ,	
VOLATILE ORGANICS:				
Benzene	8. 882	` ND	6.26	NO NO
Chlorobenzene	8, 26	0, 866	1.1	ND
Ethyl benzene	0.42	9. 054	8.34	ND
Tetrachloroethylene	8, 848	MD	8.862	ND
Toluene	6. 9	0. 36	9.4 -	· · 4.7
VOLATILE PRIORITY	,			
POLLUTANT TOTAL	7.792	8.48	11.762	4.7
				•
VOLATILE LIBRARY				
SEARCH:				
Xylene	1.48	8. 56	1.63	12.2
BASE/NEUTRAL ORGANICS:				
Bis(2-ethylhexyl) Phthalat	:a 9	, NO	М	ND
1,4-Dichlorobenzene	i	NO	NO	ND
Fluoranthene	à	XO	NO	NO

BASE/NEUTRAL PRIORITY				
POLLUTANT TOTAL	12	NO	- ND	NID
BASE/NEUTRAL LIBRARY SEARCH:		•		

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS PER WILLIAM (open).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B

TABLE 29 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA M - DISCREET SAMPLES NUODEX INC. - FORDS, NEW JERSEY

******************			****************	*************		********	*********			
SAMPLE POINT	• 2N13 •	2M14 +	2011	\$	113	116 •	2M	117 •	29	118
SAMPLE DEPTH (inches)	• 6-12 •	6-12	6-12	. 30-36 +	6-12	24-30 +		24-30	U 12	24-38
SAMPLE DATE	6/29/87-	6/29/87 4	6/29/87	6/29/87 +	6/29/87	6/29/87 •	6/29/87	6/29/87 •	6/29/87	6/29/87
esasueters	*				***********	*****	*********	•••••••	*********	*********

INORGANICS:		•					,			
	a									
Petroleum Hydrocarbons	100	17	470	550	590	158	184	139	150	75
Antimony	11	NO	4.8	· ND	8.6	14	15	24	9.2	ND
Arsenic	150	139	150	71	170	92	120	91	120	64
Beryllium	1.6	1.5	1.8	2.1	2.3	1.7	1.8	1.3	1.7	1.0
Cadnius	. 8.0	7.0	9.1	16	18	8.2	9. 3	7.4	8.3	6.2
Chronium '	180	150	170	92	250	120 -	170	150	150	150
Concer	310	330	360	810	510	410	410	210	370	250
Lead	390	360	340	630	440	420	320	320	290	260
Mercury	4.2	3.4	3.4	3.2	3.6	5.0	3.5	2.9	3.3	2.8
Nickel	21	20	20	71	24	55	35	23	35	51
Selenium /	8.1	. 6. €	13	7.4	13	5.4	6.8	4.6	15	6.8
Silver	5.9	1.8	2.4	. 0.96	3.0	2.1	1.5	1.9	2.1	1.6
Thallium	NO	M	NO.	MO	NO	ND	ND	ND	MD	MD
Zinc .	94	94	140	3000	188	880	410	130	370	150
VOLATILE DAGANICS:	•									
Chloroform	ND	8. 648	MD	NO	•	MD	MD	ND	ND	MD
BAGE/NEUTRAL DAGANICS:										
Bis(2-ethylhexyl) Phthal	late MD	NO	MD	MD	MD	ND .	MD	MD	ND	1
BASE/NEUTRAL	•									
LIBRARY SEARCH:										
				18.2	18.0	60.0	3.9	2. 3	ND	4.2
Chlorotoluene .	ND	ND	11.9	10.6	10.4	DT. T	3.7	2. 3	-	7.6

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER WILLION (pom).

[&]quot;ND" - NOT DETECTED; SINCE DETECTION LINITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX D.



TABLE 30 SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS AREA O - SLUBBE DISPOSAL AREA MUDDET INC. - FORDS, NEW JERSEY

******************	******	********	******	*******		******	*****	******			******	******	ii aaaaaa	*******		*******	*******	*******	*******	******	*******		*****
SAMPLE POINT .	201	20	2 . (• a	03 •	20	4 ,•	205 •	. a	86 () ac)7 · •	208 •	209	. 2	018	2011 +	20	12 •	20		20:	2015
SAMPLE DEPTH (inches)+	0-6	8 -6	39-35	1-6	42-48 4	1-6	36-42 +	•6 •	1-6	30-36	9-6		6 •				1 -6 •		5 13 🔸			86 .	
SAMPLE BATE .	9/11/87	9/11/87	9/11/87	9/11/87	9/11/874	9/11/87	9/11/87•	9/10/87*	9/11/87	9/11/87	9/10/67	9/10/87+	9/10/87+	9/11/87	9/10/87	9/10/87	9/10/87	9/11/87	3/11/874	9/18/87	9/10/874	8/28/874	8/28/8
***************************************			*******		*******	********	*******	•	*******	*******	******	********	******	*******	******	•••••	*******	*******	*******	******	******	******	*****
PARMETERS																							
**********					3													- "					pure.
INDREAM ICE:										-													
Arsenic	150 -	160	248	460	320	116	290	15	5.4	440	1.8	4.8	1.9	110	MD	16	18	220	17	16	3.3	2.6	CV
Cadmium	2.0	1.5	2.7	14	HD	HD	1.0	0.3	ND	ю	9.8	1.5	10	MO	MD	1.2	0.7	MD	ND	1.5	ND	ND	ND.
Chronium	160	160	220	500	140	87	160	74	89	15	8.0	37	NO	39	6.7	74	24	160	38	34	3.7	8.4	7.7
Copper	698	.448	610	990	290	160	468	120	180	500	52	RS.	3.8	200	14	220	170	620	200	100	14	13	:1
Lead	456	180	360	810	326	180	300	170 .	270	13	4.5	150	4.0	168	15	2100	234	370	148	97	11	8.3	10
≠lenius	1.4	1.3	4.6	4.1	4.6	0.8	4.7	10	ND	5.1	MD	ND	NO	2.9	MD	MD	MD	6.3	ND	€. 7	ND	MD	MD
isne	340	450	740	360	140	75	290	220	390	27	85	34	7.0	64	. 9.4	1200	1800	240	94	150	19	a	9. 3
*ABE/NEUTRAL ORBANICS:			•																				
Jenzo (a) anthracese	140	MG	NA	MA	160	NG	NG.	MA.	MA	NA	NO.	NA.	10	MA	ND	1 NA	0. 59	MG	MG	MA	MA	44	NG .
tenzo (a) pyrene	MA	NA	MA	MA	III	MA	MA.	MA	MA	MA .	NO	MA	М	MA	MD	MA	9. 61	MA	MA	MA	NA	MA	NA.
menzo (b) fluorantheme	NA .	MA	MA	MA	MA	MA	NO	MA	MA	MA	10	MA	10	MA	NED:	, NA	0. 56	NA	MA	MA	NA	MA	MA
is (2-Ethylhenyl)phthalati	MA	MA	MA	MA	MA	MA	NA.	NA.	MA	NA	1.1	MA	10	MA	MD	· NA	2.4	NA	NA	NA	MA	MA	MR
hrysane	MA	MG	MA	MA	MA	NA.	MA	MA.	NA	MA	100	160	**	MR	ND	* MA	8. 62	NA	NA	MA.	NA	,NA	MA
luorantheme	MA	MA	MA	MA	167	MA	MA .	NA .	NA.	MA	NO	160	10	NA	MD	MA	1.6	MA	NA	MA	MA	MA	MA
henanthrene	MA	MA	MA	MA	N/A	160	NA	NR	MA	140	10	NA		MA	ND	NA	0.74	NA	NA	NA	NA.	NA	MA
'yrene	NA	NA .	NA	NA .	NA .	NA .	MA	MA	MA	NA.	· NO	100	10	NA	MD	NA .	1.2	NA	NA	MA	MA	MA	
ASE/NEUTRAL PRIORITY POLLUTANT TOTAL	ма	NA	MA	MA	MA	NA	NA.	NA	МА	ж	1.1	MA	ND	NA .	, KD	NA.	a. 32	NG	NΩ	MA	NA	NA	Na.
BASE/NEUTRAL I BRANY SEARCHI							-	-															
			***			**	NO	110	NO.	40	M D	- 100	a 24	MO	₩D.	. 100	MD	MO	NO ·	NO.	NG.	110	NO.

ONLY PRAGMETERS DETECTED IN AT LEAST DNE SAMPLE ARE BHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PORTS PER HILLION (ppm).

"NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX 8.

"NA" - NOT ANALYZED.

h loroto luene

TABLE 31 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA D - NON-VEGETATIVE GROWTH AREA NUODEX INC. - FORDS, NEW JERSEY

****************	*****	*******	****		****	******	***	******	****	*********
SAMPLE POINT		201	•	505	•	203	•	204	•	205
SAMPLE DEPTH (inches)	• 1	36-42	•	36-42	•	36-42	•	0 -6	•	36-42
SAMPLE DATE	•	8/31/87	•	8/31/87	•	8/31/87	•	9/2/87	٠	9/2/87
*************	*****	*******	****	********		****		*******	****	********
PARAMETERS	٠									
******************	***									
INORGANICS:										

Arsenic		250.0		210.0		289.6		74.0		85. ə
Cadmium		0.46		ND		3.0		9.3		18.0
Chromium		99. 0		B3. 0		190.0		110.0		22 0. e
Copper		358.0		260.8	,	590.0		580. 9		320.0
Lead		320.0		290.0		330.0		280.0		390.0

120.0

140.0

Zinc

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
ND - NOT DETECTED; SINCE DETECTION LIMITS VARY,
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 12 SUMMARY OF SOIL SOMPLE RIGHLYTICAL RESILTS AREA R - MARSHLAMOS MUDDEX INC. - FORDS, NEW JERSEY

SAMPLE POINT SAMPLE DEPTH Linches SGMPLE DATE	+ 2F1 + 3-6 . 4 + 9/10/87 +	2R2 0-6 9/10/87	4 2R3 4 9 9-6 4 9/10/87 4	9-6 9/19/87	84 • • • • • • • • • • • • • • • • • • •	2R5 0-6 9/10/87	9-6 9/10/87	286 30-36 9/10/87	2R7 8-6 9/14/87	2R8 6 8-6 9/14/87	2R9 4 • 0-6 • • 9/14/87 •	0-6 3/14/87	24-30 ± 9/14/87 ±	2R11 + 0-6 + 9/14/87 +	2R12 8-6 9/11/87
PARAMETERS BORDESSESSESSESSESSESSESSESSESSESSESSESSESS	6										,				
Arsenic Caderum Chromium Copper Lead Zinc	196 HU SE 728 16 9 248	28 ND 20 72 53 EL	300 110 300 290	5. 9 0. 58 11 100 120 228	29 0.71 44 288 278 268	34 ND 23 120 100 63	14 ND 12 39 22 86	2.6 ND ND 54 1.9 24	140 0.7 120 340 340	180 0.4 128 270 250 129	140 0.9 150 400 380 150	7.0 ND 9.6 20 14 39	8.4 ND 10 19 14 32	160 1.8 120 430 320 160	123 N0 144 354 290

CALL PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

"NO" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 33 SUMMARY OF SLUDGE SAMPLE ANALYTICAL RESULTS AREA ST - SEPTIC TANKS NUODEX INC. - FORDS. NEW JERSEY

- · · · : - · · · · · ·	TANK #17 BRAS 8/4/37	# TANK #3 # GRAS # 8/4/87
PARAMETERS +		
*****	5.	
INDRGANICS:		
Total Syanide	ND	6.7
Petroleum Hydrocarbons	710,000.0	540, 000.0
Total Phénols	a. 92	4.9
Arsenic	8.8	13.0
Cadmium	11.0	19.0
Chromium	୧୫. ଡ	41.0
Copper	3, 500. 0	880.0
Lead	100.0	200. ଏ
Mercury	Ø. 33	ે ૩૭. જ
Nickel	42.0	47.0
Selenium	4.3	0. 93
Silver	2.3	9.9
Zinc	17,000.0	2,900.0
· · · · · · · · · · · · · · · · · · ·	•	•
VOLATILE ORGANICS:		
Chlorobenzene	ND	3.9
trans-1.2Dichloroethylene	ND	1.5
Ethylbenzene	ND	1.0
Tetrachloroehtylene	ND	3.6
Toluene	ND	0.7
Trichloroethylene	ND	0.7
VOLATILE PRIORITY		~
DOLL HITANT TOTAL	ND	11.4

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS FER MILLION (DDM).

"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B FOR SPECIFIC DETECTION LIMITS.

TABLE 34 SUMMARY OF VOLATILE ORGANIC COMPOUND GROUND WATER ANALYTCAL RESULTS ECRA AND MJPDES MONITOR WELLS MUDDEX INC. - FORDS, NEW JERSEY

HELL NUMBER # STOPPLE DATE #	9/25/87 9	9/25/87 (A3D A9/25/A7	• 64D • 9/28/87	+ 05S +	9/24/87	M6S (M6D 4 9/27/87	• J7S	4 J70 4	R8S 4	RAD	B9D. 4	PISD .	BIIS	MI2D +	0130
PARMETER &	1000000000	 	100011101 1	********	**********	********	*******	******	********	*********		*******	*******	*********	*******	* 3/23/8/ *	10/12/0/
VOLATILE ORGANIC COMPOUNDS:														-			
Acrolein Acrylonitrile Benzene Bromoform Bromoform Bromomthane Carbon Tetrachloride Chlorobinzene Chlorodibromomethane Chlorosthane 2-Chloroethylvinyl Ether Chlorosthane 2-Chloroethylvinyl Ether Chloromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene 1,2-Dichloroethylene 1,2-Dichloropropane cis-1,3-Dichloropropylene trans-1,3-Dichloropropylene trans-1,3-Dichloropropylene Ethylbene Chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene 1,1,1-Trichloroethane		<u> </u>	# # # # # # # # # # # # # # # # # # # #	1999 1999 1999 1999 1999 1999 1999 199	19 19 19 19 19 19 19 19 19 19 19 19 19 1	######################################	\$	55555555555555555555555555555555555555	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	99999999999999999999999999999999999999	\$	5-666666666666666666666666666666666666	55555555555555555555555555555555555555	255555555555555555555555555555555555555	999999999999999999999999999999999999999	55556555555555555555555555555555555555	36666666666666666666666666666
TOTAL PRIORITY VOLATILE ORGANIC COMPOUNDS	247	295	ND	2400	110	NO	5	312	28486	10500	ND	ND	338	160	ND	13	ND
Chlorotoluenes Tylenes Miscellaneous and Unknowns	10 ND 38	ND ND 25	MD MD MD	32000 ND ND	4950 360 180	75 NO NO	700 30 ND	3986 630 218	112 990 ND 2 998	88869 DM 21688	42 10 ND	12 ND ND	и) 06:1 Ом	488 Qin Qin	16 ND ND	1520 ND 360	60 60 63
TOTAL NON PRIORITY VOLATILE ORGANIC COMPOUNDS	48	25	ND	32000	5490	75	739	4820	114000	84600	52	12	190	460	lė	1880	ND
TOTAL NELL VOLATILE ORGANIC COMPOLADS	295	238	N()	34400	5600	75	735	5132	142000	94800	52	12	فيئا	640	it	1893	ΝD

NA - NOT ANALYZED.

NO - NONDETECTABLE LESS THAN 50 ppb FOR ACROLEIN AND ACRYLONITRILET LESS THAN 5 ppb FOR OTHER VOLATILE ORGANICS.

NO - NONDETECTABLE LESS THAN 5000 ppb FOR ACROLEIN AND ACRYLONITRILET LESS THAN 500 ppb FOR OTHER VOLATILE ORGANICS IN WELLS UPB, 375 AND 370.

NO - NONDETECTABLE LESS THAN 1000 ppb in Wells 604, 375 and 370.

D - DETECTABLE LESS THAN 1000 ppb in Wells 604, 375 and 370.

D - DETECTED IN SAMPLE MANN. SAMPLE MANN VALUE HAS BLEADY BEEN SUBTRACTED OUT.

SEE ANALYTICAL DATA SALTS PROVIDED IN APPENDIX C.

RLL SOUPLE CONCENTRATIONS IN PARTS PER BILLION (ppb).

TABLE 34 (CONTINUED) SUMMARY OF VOLATILE ORGANIC COMPOUND GROUND MATER ANALYTCAL RESULTS ECRA AND NUPDES MONITOR MELLS NUCDEX INC. - FORDS, NEW JERSEY

JELL NUMBER Sample date Hardweter Pragmeter	9/25/87 •	916D 9/25/87	* K17S	* K170 +	R19D (R205	R290 (M21S	# 9/23/A7	 9/23/87 	* 9/27/A7	M23S-2 9/23/87	0/2//07	0/3//07 -	0/24/07 -	0.00.07
AOLATILE ORGANICS:																
Acrolein Acrylonitrile Benzene Bromoform Bromomethane Arbon Tetrachloride Chlorobenzene Chloroethane Chloroethane Chloroethane Chloroethane Chloroethane Chloroethane Chloromethane Chloromethane Chloromethane Chloromethane I, 1-Dichloroethane I, 2-Dichloroethane I, 2-Dichloroethane I, 2-Dichloropropylene trans-1, 2-Dichloropropylene trans-1, 3-Dichloropropylene		<u>ਫ਼</u>	99999999999999999999999999999999999999	100 100 100 100 100 100 100 100 100 100		௺Ŗੑੑਫ਼ ੶੶		######################################	현영 영화 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등	99999999999999999999999999999999999999	99999999999999999999999999999999999999	138 138 138 178 178 178 178 178 178 178 178 178 17	252555555555555555555555555555555555555	991999999999999999999999999999999	292959999999999999999999999999	# ####################################
TOTAL PRIORITY			4070	. —												
VOLATILE ORGANIC COMPOUNDS	ND	ND	4870	156	78	ND	ND	11	672	ND	1770	3300	ND	14	ND	17
Dilorotoluenes Tylenes Hiscellaneous and Unknowns	NO NO NO	5 ND ND	21200 ND 5850	2030 72 45	ND ND 16	7 ND 16	16 ND ND	119 33 ND	9200 2010 274	523 7 ND	147 08 79 09 2 54	5200 163 4900	E ON 10	ND ND 6	ND ND 13	ND ND 76
TOTAL NON PRIGRITY JOLATILE DREAMIC COMPOUNDS	NO	5	27850	2150	16	23	16	152	11500	538	22900	10300	16	. 6	13	76
TOTAL MELL AXLATILE ORGANIC COMPOUNDS	NO	5	31129	2306	94	23	16	163	12170	538	24670	13600	16	20	13	93

NO - NOT HNGLYZED.

NO - MONDETECTABLE LESS THAN 50 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 5 ppb FOR OTHER VOLATILE ORGANICS.

NO - MONDETECTABLE LESS THAN 5000 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 500 ppb FOR OTHER VOLATILE ORGANICS IN WELL K17S.

NO+ - NONDETECTABLE LESS THAN 1000 ppb IN WELL K17S.

B - DETECTED IN SAMPLE BLANK. SAMPLE BLANK VALUE HAS ALREADY BEEN SUBTRACTED OUT.

SEE AWALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

TABLE 34 (CONTINUED) SUMMARY OF VOLATILE ORGANIC COMPOUND SPOUND WATER ANALYTCAL RESULTS ECRA AND NIPDES MONITOR MELLS MUCDEX INC. - FORDS, NEW JERSEY

HELL NURBER	6260			F29D	********** * _L30S	* L30D *	- A34D2	• K36D2	* M37D2 4	E38S	E39S
SAMPLE DATE	9/28/87	9/29/87	• 9/30/87 (9/39/87	• 9 /29/87	9/29/87	9/25/87	• 9/28/87	9/23/87	9/29/87	9/29/87
****************	******	********	********	********	*********	********	******	*******	********		******
PRARMETER											
*******************	•										
VOLATILE ORGANICS:	-										
Acrolein	ND	NA	MD	ND	Ю	ND	· ND	ND	ND	. NA	NΑ
Acrylonitri le	ND	NA	ND	ND	MD	ND	NO	ŇĎ	ΝĎ	NA	NA.
Benzene	ND	NA	· ND	ND	MD	39	ND	ND	49	ND	ΝĎ
Bromoform	ND)	MA	ND	MD	ND	MD	ND	ND	ND	ÄÄ	ÑÃ
Brownethane	ND=	NA	ND+	ND=	ND+	NDa	ND+	ND+	AD+	No	NA
Carbon Tetrachloride .	NED	NA NA	ND	ND	ND	ND	ND	ND	ΝD	NÁ	ija
Chlorobanzane	18	NA	ND	ND	· ND	670	NG	578	30	NA	144
Chlorodibronomethane	ND	NA	ND	ND	ND	ND	ΚŪ	ND	ÑĎ	NA	NA.
Chloroethane	ND+	NA	ND+	ND+	ND=	ND+	ND#	ND#	ND•	:16	Air
2-Chloroethylvinyl Ether	MD	NQ.	ND	ND	ND	ND	ND	ND	ΙŪ	NA	HA
Chlorofore	ND	NA	ND	ND	ND	1200	ND	1500	89	NA	:49
Chioromethane	ND+	NA	ND+	ND+	ND=	ND•	ND:	ND•	ND:	NA	149
Chlorobromomethane	ND	NA	ND	ND	ND	ND ·	ND	ND	Cit	NA	NA
1, 1-Dichloroethane	ND	NA	ND	.ND	NĐ	ND	ND	ND	ND	NA	NA
1,2-Dichloroethane	NO	NA	ND	ND	ND	ND QN	ND	ND	ND	NiA	ide
1, 1-Dichloroethylene	MO	NA	ŧΦ	ND	ND	ND	ND	ND	IID	::4	ĺ.,
trans-1,2-Dichloroethylene	MD	NA	ND	NO	ND	ND	ND	₩Ď	110	ધમ	NA
1,2-Dichloropropane	ND	· NA	ND	ND	ND	ЙĐ	ND	ИĎ	:iD	MJ	Nife
cis-1,3-Dichloropropylene	NO	NA	MD	ND	ND	ΝĎ	ND	ND	ND	સર	:19
trans-1,3-Dichloropropylene	. ND	NA	ΝĎ	ND	ND	ND .	ND	ND	îŵ.	NA .	Alt
Ethylbanzene	ND	NA	MD	ND	ND	20	MD	ND	ND _	:24	ŀŶ
Methylene Chloride	ND	MA	ND	ND	6408	ND-8	ND	ΝĎ	ND-B	NA	NA
1, 1, 2, 2-Tetrachloroethane	ND	NA	MD	NJ	MD	ND	Çiri	ΝĐ	ND	:63	ΝĢ
Tetrachloroethylene	MD	MA	ΝĐ	ND	ND	ND	NO	ιĐ	ΙĐ	lú	înî
Toluene	758	4300	ND	ΝD	96448	18005	1 L	8-958	1 E J	:	• •
1,1,1-Trichloroethane	ND	MA	Ιώ	HD	M	NĽ	ii	ដែ	ďκ	м,	
1,1,2-Trichloroethane	ND	NA	NC	NO	ND	MD	ND		ΝÇ		- 41
Trichloroethylene	ND	NA	نان	ND	ND .	٠٠٠ .	ND	ينة	iĝ	• :	i
Trichlorofluoromethane	ND	NA	ΝĎ	NS	ND	M	ND	انيا	ND	<u>ાંને</u>	147
Vinyl Chloride	ND+	Ná	100	ND+	NO+	14.	NC+	NS	រុះប៉ុ÷	in	i.n
Methyl Etnyl Ketone	NG	NA 	λĽ•	ND:	NC+	NS+	NA	1.3	iЫ	NA	
TOTAL PRIGRITY											- ····
VOLATILE ORGANIC COMPOUNDS	áS	-366	:D	145	18290	3720	ND	16559	1760	ND	19

TOTAL COLORS					~=====						
TOTAL PAIGRITY VOLATILE DRIANIC COMPOUNDS	65	-366	:D	i:G	18290	3788	ND	16289	1760	ND	19
Chlorotoiuenes Tylenes Miscellareous and Unknowns	112 ON CN	원 대	588 ND ND	CIN CIN CIN	12980 ND 754	27200 3 58 31	ND ND	76700 ND 3340	1410 ND 236	NA D NA	NA ND NA
TOTAL NGW PRIORITY VOLATILE ORGANIC COMPOUNDS	112	NA	588	ND	13700	27600	ND	88888	1650	ND	ND

TOTAL WELL VOLATILE ORGANIC COMPOUNDS

NO - NOT ANALYZED.

NO - NONDETECTABLE LESS THAN 50 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 5 ppb FOR OTHER VOLATILE ORGANICS.

NO - NONDETECTABLE LESS THAN 5000 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 500 ppb FOR OTHER VOLATILE ORGANICS IN HELLS L30S AND K36D2.

NO - NONDETECTABLE LESS THAN 1000 ppb IN HELLS L30S AND K36D2.

B - DETECTED IN SAMPLE BLANK. SAMPLE BLANK VALUE HAS ALREADY BEEN SUBTRACTED OUT.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

ALL SAMPLE CONCENTRATIONS IN PRATS PER BILLION (ppb).

TABLE 35 SUMMUR: OF EMBERGEUTRAL COMPOUND GROUND WATER ANGLETICAL RELUCTS ECRA AND NUFFES MONITOR WELLS MICHAEL TRC. - FORES, NEW JERSEL

ELL MINGER SMALE DATE 4 9/ 1-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	/සි/87 ••••••	9/25/87	9/25/87 •	9/28/87 (9/24/87	3/24/87	9/23/87 (9/23/87	9/28/87	4 J7D + 4 3/28/47 +	RES (3/造/87 (************************************	h hal 1 3,22,07	ه لين ه ۱ آن دريال ۹ ۱۹۹۹ (۱۹۹۹)	ه الحادة ه الحادة العادة ************	8.15 a 3.29.67 a	ಸ್ಟಾಪ + 9/23/87 +	8130 10/12/6
rge Neutral Compounds:																	
									N 13 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	<u> </u>	255535555555555555555555555555555555555	25555555555555555555555555555555555555	999999999999999999999999999999999999999
TOTAL PRIORITY REE NEUTRAL COMPOUNDS	MO	MD	MD	NA ·	NA	26	NA	NA	619	2400	70	MD	NA	144	MD	NA	ND
TOTAL NON PRICATTY RSE NEUTRAL CONFOLINGS	81	12	ND	MA	WA	160	MA	MA	6340	28200	10	55	NA	NA	69	NA	419
TOTAL HELL IRGE NEUTRAL COMPOUN OS	81	12	ND	MA	NA	186	MA	· NA	6950	30600	. 80	55	NA	NÂ	69	NA	419

NA - NOT PARLYTED.

NO - NONDETECTABLE LESS THAN 10 ppb.

NO - NONDETECTABLE LESS THAN 100 ppb IN WELLS J7S AND J7D.

SEE RUPLYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

RLL SAMPLE CONCECTRATIONS IN PARTS PER BILLION (ppb).

TABLE 35 (CONTINUED) SUMMARY OF BASE/NEUTRAL COMPOUND GROUND WATER AMPLYTCAL RESULTS ECRA AND NUPDES HUNITOR NELLS NUODEK INC. - FORDS, NEW JERSEY

Section Sect	MICE F DOTF	• 9/25/87	• 9/25/87	• K17S	* K170 * 9/28/87	• 8190 • 18/2/87	• 929 5	R280 9/24/87	# M215 # 9/23/87	• H21D • 9/23/87	• N22S •	M22D	M235 .:	DESHS (DESAU •	0250	• 626S
Second S	MANETER									•••••					•••••	*********	•••••
semplethy ince	SE NEUTRAL COMPOUNDS:																
Angle Angl				MD	NO MD	NO NO	ND		MA		NA NA		ND ND	. ND			s,a
s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane) s (2-chtpolane)) Pathabase s (2-chtpolane) s (2-cht	thracene	NĎ	ND	MD	ĬÕ	iõ	ND	NĎ	NA	NA	NA	NA	10				N/A N/A
s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane) s (2-chtpolane)) Pathabase s (2-chtpolane) s (2-cht			MD MD	100	100	NO NO		MD.	MA		NA -						NA
s (2-chip/mays) Pitchane	nzo (k) Fluoroanthene	NO.	Ñ	- 100	. 166	ã	20	100	NA NA								. NF
s (2-chip/mays) Pitchane	nzo (a) Pyrene	MD	10	ND	10	10	ND	ND	NA	NA	. NA						N
s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane)) Pathabase s (2-chtpolane) s (2-chtpolane)) Pathabase s (2-chtpolane) s (2-cht	izo (g,n, 1) Perylena		, MD			100	100	MO		NA.	NA						N
s (2-chip/mays) Pitchane			M)		3	100	100	5	983 MO	MA.							N
C-Chiforologropy Elhell M0	s (2-chloroethoxy) Methan	e iõ	10		HD.	Ñ	Ã	. 10	WA								N
Transplant Premy Ether MD MD MD MD MD MD MD M	i (2-ethvlheuvl) Phthalata	M	M	ND	NO	26	ND	ND	MA.	NA	NA	NA	169	ND			N
All Consequents All	(2-Chloroisopropyl) Eth	N ND	NO.	MO .	ND.	10	MD		MA.				M				N
All Consequents All	vi Bunzvi Phthalate	2	iii)	2	36	36	100	. (40)	MQ MEH								N
### Section 19 MO MO MO MO MO MO MO M	Aloronaghthalene	NO.	ÑÕ	Ñ	ND		Ã		20								
Part	hlorophonyl Phonyl Ether		ЖĎ	MD	HD	, NO	MO	ND	NA	MA	NA	, NA	ND		нD		N
w-Butylphthalate H7 M0 188 H0 180 H0 180 H0	ysane		MD	ND ND	10	. 10	MD	MD	NA				ND				
	w-Butylphthalate		Ñ	ND	100	100	20		140								
P-Dischloroberazidine MD MD MD MD MD MD MD MD MD MD MD MD MD M	-01chlorobenzene	M)	NO	188	Ã	NO	NO	NO	NA								
P-Dischloroberazidine MD MD MD MD MD MD MD MD MD MD MD MD MD M		MO	ND	. 100	KO	. 10	MD	NO	MA		NA	NA	ND	ИD	Ġā	IAD	Ň
### ### ### ### ### ### ### ### ### ##				· 38	100				NA NA								
### ### ### ### ### ### ### ### ### ##			100	. 20	10	100	io.	100	MQ								
**************************************	methylphthalate	ND	ĬÕ	MD	ĬÕ	10	ND	ΝĎ	NA.								Ñ
## Octyphythelate NO NO NO NO NO NO NO NO NO NO NO NO NO			MD	NO	ND												N
			M)	MD.	100		100	100									
March Marc		ã	100	NO			- 15 ·	36	10				MU 23				
Achieve No No No No No No No No No No No No No	oranthene		NO	NÕ	ND	10	ND:	ND	NA	NA			ND				
acchloroshetarine MO MO MO MO MO MO MO MO MO MO MO MO MO			MD	MO	18	M	MD	ND	NA	NA	NA						
Machicrosethame MD MD MD MD MD MD MD M			2	MD MD	70 10	100	. NO.	MD.	MEA MEA	NA NO							
Second 1, 2, 3, c, d) Pyresse MD MD MD MD MD MD MD M	each lorgethane	ND:	Ñ	100	ĩ	ã	Ñ	ND)	NA	NA	NA						
## ## ## ## ## ## ## ## ## ## ## ## ##	achlorocyclopentadiene		NO	NE)	ND	ND.	MO:	MD									
## ### ### ### ### ### ### ### ### ###	iono (1,2,3,c,d) Pyrono		100 100	MD	10	10		ND .	NR NA			. NA					
TOTAL PRIDRITY EXEMPLIFIED 100 NO NO NO NO NO NO NO NO NO NO NO NO NO	athalane	ND	100	¥0	¥0	20	100 H	100	100			MA	ND				
18	robanzane	MÔ	jiõ	. NO	ĬÕ	NO.	ЖÕ	MO	NA	NA	NA	NA	ND	ЮD			
2.4—Trichlorobenzene NB NB NB NB NB NB NB NB NB NB NB NB NB		M	10	ND	MO	NO.	· MD	ΝĐ	NA								
TOTAL MELL **TOTAL DISTORATOR **TOTAL MELL *	itrosodi melleny i ani ne	100	10	MD MD	10	10	MD	MD	NF)	36 4							!
LA-Trichlorobanzene NO NO NO NO NO NO NO NO NO NO NO NO NO		2	100	MD MD		3	200	MO	100			20					
\$\frac{\text{ND}}{\text{ND}} \text{ND} \text{ND} \text{ND} \text{ND} \text{ND} \	ene	MO	Ñ	NO)	NB	10	MD	NO	NA	NA		NA	ND				
TOTAL PRIORITY E NEUTRAL COMPOUNDS NO NO 2860 1830 357 123 34 NA NA NA NA NA 6450 4 6 ND II TOTAL DRICKLED NA NA NA NA NA NA NA CASO NA NA NA NA NA CASO NA NA NA NA NA NA NA CASO NA NA NA NA NA NA NA NA NA NA NA NA NA																	
NE MELITRAL COMPOUNDS NO NO 210 18 26 NO NO NA NA NA NA 220 NO NO 11 P TOTAL NON PRIDRITY E MELITRAL COMPOUNDS NO NO 2660 1830 357 123 34 NA NA NA NA 6450 4 6 NO P TOTAL MELL		ND NO															
TOTAL NON PRIDRITY SE NEUTRAL COMPOUNDG NO NO 2860 1830 357 123 34 NA NA NA NA 6458 4 6 ND N Total Well		10	MO	210	18		MD	ND.	NA	NA	NA	NA NA	220	ND	ND	11	
NE MELITRAL COMPOUNDS NO NO 2860 1830 357 123 34 NA NA NA NA 6450 4 6 ND N Total mell						_									-		
	THE NOW PRIDRITY																
3E NELITIRAL COMPOLINOS NO NO 3070 1850 383 123 34 NA NA NA NA 6670 4 6 11 N		10	ND	2860	1830	357	123	34	NA	MA	MA	MA	6458	4	6	ND	N

MA - NOT ANALYZED.

NO - NONDETECTABLE LESS THAN 10 ppb.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.
ALL SAMPLE CONCENTRATIONS IN PARTS PER BILLION (ppb).

TABLE 35. (CONTINUED) SUMMARY OF BASE/NEUTRAL COMPOUND GROUND WATER ANALYTICAL RESULTS ECRA AND NIPDES MONITOR MELLS NUODEX INC. - FORDS, NEW JERSEY

				MLO	JC A 176.	runus, reci	JI. NOK 1				
LELL MARGER SAMPLE DATE	5260 9/28/87	• B270 • 9/29/87	F29S 6	F290 9/30/87	L385 9/29/87	L380 (A3402 9/25/87	* K3602 * 9/28/87	#3702 9/23/87	E38S 9/29/87	E39S 9/29/67
PARRIETER 4						••••••					•••••
BASE NELTRAL COMPOUNDS:			:								
Acenaphthene	ND	MA	ND	NO	. MD	Ю	ND	NO	ND	16 3	MA
Acenaghthy lene	M	· NA	HQ.	HD.	ND	ND.	NO.	ND	ND	MA	NA
Anthracene Benzo (a) Anthracene	NO NO	MA	NO NO	10	NO.	10 16	ND ND	M) M)	ND ND	MA	NA NA
Benzo (b) Fluoranthene	100	NA NA	ĬĎ.	ž.	ND ·	160	100	NE)	NO.	NA NA	NA NA
Benzo (k) Fluoroanthene	ND	NA	MÔ	ÄÕ	MO	ND	NO	NO.	ND	NA	ÃÃ
Benzo (a) Pyrene	ND	NA	MÕ,	MD	, ND	· ND	ND	ND	ND	NA	MA
Benzo (g.h.i) Perylene	ND ND	MA MA	ND NO	. MO	ND ND	M	MD	NO	MO	NA	NA NA
Benzidine Bis (2-chloroethyl) Ether	. 26	NA	ND.		20	ND ND	NO NO	ND ND	MD MD	NA NA	NG NG
Bis (2-chloroethoxy) Methans		ÑÃ	ÃÕ	100	ã	ND NO NO	ã	Ñ	1	MA	ina
Bis (2-ethylbenyl) Phthalate	ND	NA	ND	NÖ	10	ΝĎ	NO	MD.	ND.	NA	NA
Bis (2-chloroisopropyl) Ether 4-Brosophenyl Phenyl Ether	8 NO	MA	MO ·	NO	NO.	ND	KD	, MD	ND	NA	NA
4-bromognenyi Phenyi Ether Butyi Bunzyi Phthalate	ND.	NA NA	10	10	100	NO	ND ND	M	MO	MA	NA
S-Chloronaphthalene	100	NA.	ND.	MD MD	ND ND	NO NO	. 100	NO NO	ND ND	NA NA	NA NA
4-Chlorophenyl Phenyl Ether	100	120	140	ã	20	Ã	Ñ	Ñ	ND	- 100	ÑÃ
Chrysana	NO	NA	ND	ΝŌ	NO NO	ND.	ND	ND	ND	ÑÃ	NG
Dibonzo (4,h) Anthracumo	. 10	NA	ND	NO	. жо	ND	MD	ND	ND	NA	NA
Di-n-Butylphthalate	, NO	MA MA	ND	MD	10	· NO	NO.	MD	ND	NA	NA
1,2-Dichlorobenzene 1,3-Dichlorobenzene	NO NO	NG NG	MD CM	NO NO	M0	NO NO	ND ND	850 ND	ND ND	NA NA	NA NA
1, 4-Dichlorobenzene	100	- MA	ND ND	Ñ	ž	100	. 10	20	100	MA	MA
3, 3° -Dichlorobenzidine	ĬĎ	MA	ΝĐ	Ĭ	ĬÕ	NO	100	ÄÕ	ΝĎ	ÑÃ	· NA
Diethylphthalate	HO.	MA	ND	NO	10	NO	ND	160	. NÕ	NA	NA
Dimethylphthalate	NO.	NA NA	ND	NO	KO	ND	Ю	NO	ND	NA	MA
2,4-Dinitrotoluene	NO NO	NA NA	NO NO	MD MD	ND ND	ND ND	NO NO	MD MD	ND NO	NA NA	NA
2 ₄ 6-Dinitrotoluene Di-n-Octylphthalate	100	MA	ND.	100	NO.	NO.	100	10	NO.	NA.	NA NA
1,2-Dighenylhydrazine	100	· 🙀	NO.	100	Ã	Ñ	ã	Ñ	ÃĎ	NA.	NA.
Fluoranthene	ND	NR	ND	Ñ	ND	HO	NO	ND ·	ND	NA	NA ·
Fluorene	ND	NA.	MD	NO.		ND	HD	NO	MO	NA	NA
Hexachlorobenzene	10	NA	MD	10	100	MD	NO.	¥0	NO	MA	NA
Hesachlorobutadiene Hesachloroethane	MD MD	MA NG	· ND	ND NO	MD MD	ND ND	HD HD	ND ND	ND ND	NA NA	NA Na
Hexachlorocyclopentadiene	iã	MA	Ñ	100	ã	ND	ã	Ñ	100	MA .	ÑÃ
Indeno (1,2,3,c,d) Pyrane	ND	NA	ND	NO	. 10	NO NO	IO	ND	HŌ	NA	NA
Isophorone Nachthalane	10	MA	- ND	MD	iõ	ND	10	NO	HO	NA	NA NA
Haphtha lene	10	NA NA	MD MD	ND ND	ND MD	MD MD	ND ND	ND ND	10	MA MA	NEI NEI
Nitrobenzene N-Nitrosodimethylamine	100	NA NA	ND ND	NO	. 20	NO	20	NO	ND .	NA NA	NA NA
H-Hitrogodigheny lamine	150	MA	ΝĎ	100	MD	ND	ĩõ	ND	ÃÕ	NA	NA NA
#-Mitrosodi -n-Fr opylami ne	ìÕ	NA	NO	NO	NÖ	ND	ND	NO	NO	NA	MA
Phonanthrone	NO	" NA	ND	NO	ND ND	MD	ΝĐ	NO	MD	NA	NA NA
Pyrene	MO	NA NA	MD MD	ND ND	ND NO	NO NO	ND ND	ND ND	ND NO	MA MA	NA NA
1, 2, 4-Trichlorobenzene Butylbenzene	10 10	NA.	ND ND	20	NO	ND	160	20	- 120	20	NA
PHT .	ã	MA	ÑÕ	ĬĎ	ΝĎ	NO	NÕ	ŇĎ	NO	ŇÄ	NA
TOTAL PRIORITY											
BREE NEUTRAL COMPOUNDS	MD	· NA	ND	MD	MD	ND	MD	850	MD	MA	NA
TOTAL NON PRIORITY BASE NEUTRAL COMPOUNDS:	295	MA	475	NO	65800	18000	ND	25100	24500	NA	NA
				_		, .				,	

NASE MELITRAL COMPOUNDS

NA - NOT ANALYZED.

NO - NONGETECTABLE LESS THAN 10 ppb.

NO - NONGETECTABLE LESS THAN 200 ppb IN MELL LESS.

NO - NONGETECTABLE LESS THAN 200 ppb IN MELL LESS.

NO - NONGETECTABLE LESS THAN 200 ppb IN MELL LESS.

NO - NONGETECTABLE LESS THAN 100 ppb IN MELL RESD.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

ALL SHAFLE CONCENTRATIONS IN PARTS PER BILLION (ppb).

TABLE 36 SUMMARY OF INDRSANIC NETALS, PETROLEUM HYDROCARBONS, FORMALDEHYDE, COLIFORM, AND PH GROUND WATER ANALYTICAL RESULTS ECRA AND NUMBES MONITOR WELLS NUMBER INC. - FORDS, NEW JERSEY

*****************	********	*******	*******	*******	****	******	*********	********	********	*******		********	********	********	********	*******		
MELL NUMBER	o ECRA .	D25 •	D2D •	A30 1	640 4	056	• 050 •	MGS .	M6D +	J7S •	J7D +	R8S	• R&D •	B3D •	BtěD +	B115 +	101120 4	מנוח
SAMPLE DATE	ASUIDEL INE	9/25/87 +	9/25/87	9/25/87	9/28/87	9/24/87	9/24/87	9/23/87 +	9/23/87 •	9/28/87 .	9/28/87	9/25/87	· 9/25/87 ·	9/29/87 •	9/29/87	9/29/87	9/23/87	10/12/07
**************	*********	*******	********	********		******	********	*******	********			*******		********	*******	*******	********	*******
PARAMETER	•															,		
******************	***								,									
tupppoutor.									•									
INDREANICS																		. }
Antimony		(0.020	(8. 626	MA	NA	NA	(8, 929	NA	NA	NA .	'NA	NA	NA	NA	NA	10.020	NA	(0. 020
Arsenic	9.95	(0.010	(0.010	NA	NA	NA	(8, 928 8, 845	8.061	0.18	NA	MA	NA	NA	· NA	NA	(0.010	(8.818	(0. 016
Barium	1.0	MA	NA	MA	NA	NA	MA	0.33	0.054	NA	NA	NA	tiá).	NA	NA	NA NA	0.13	1 1 2
Beryllium		(6.005	(8. 965	NA	.NA	NA	(0.005	NA	NA	NA	Niñ	No	NA	149	NA	(0. 005	NA	6
Cadhiya	0. OL	(0.002	(0.002	MA	MA	MA	(8.003	(0.002	(0.062	NA	NA	Nei	P#4	NA	NA	(8.882	(0.002	10
Chronius	9.65	(8.01	(0.01	NA	, NA	NA.	(0.01	(D. 01	(0.01	NA	MA	NA	14.	144	NA.	(0, 01	(0.01	9
Copper	1.0	(0, 020	(0, 626	NA	NA ·	NA	(0.920	, NA	_ NA	NA	NA.	NA NA	NA.	Tail	NA .	(8, 829	_NA	10.000
Iron		161	NA	N6)	161	MA	NA 10 PAS	19	2.2	NH.	NH NG	194	iwi	NH	NA NA	NA (A. A.)	5.0	10.305
Lead	8. 65	(8, 965	(0.965	761	161	MA	(8, 965	(0.005	(0.005	NEH N/A	P84	NH	F ill	NA NA	NA NA	(0. 895 NA	(0. 00 5 0. 22	(0. 305 NG
Manganese		(8. 8082	NA (0. 8662	700	, mai	NA NA	(8.9862	(0.0002	0.29 (8. 800 2	(8.6662	(8.030.	NA NA	PHG.	NOT.	NA	(0.8002	(0.0002	(0. 8982
Mercury Nickel	0.002	(0.040	(0.040	NO.	, mai	NA	(8.848	NA NA	NA	10.000	NA	NA	, ren	NG.	NA	(8.848	NA .	(0.046
Selenium	0.01	(8. 865	(0.005	. 100	100	NA	(0.005	(8. 865	(8.005	MO	NO.	MO	EM EM	113	ÑÃ	(0.005	(8.985	(0. 865
Silver	4.65	(0.010	(0.018	¥0		-	(8.010	(0.010	(8. 010	140	WG	140	NG.	NG.	NA.	(0.018	(8, 818	(0.010
Sodium	4.40	10.0	NA		MA	NG.	NA.	129	856	MAG	NAG	NG	Ni	144	NA	NA.	220	NA
Thallium		(0, 010	(8.010	MA	MA	NA	(0.010	NA NA	NA NA	NA	NA	NA	NA	NA	NA	(0.010	NA	(0. 616
line	5.0	(8. 628	0. 078	NA	MA	NA	0.032	NA	NA	NA	MA	NA	N-i	NA	NA NA	0. 092	NA	0. 052
Petroleum Hydrocarbons	ĩ.	NA	NA	NA.	NA	NA	NA	MA	NA	NA	NA	NA	NA	NA	NA.	NA.	NA	NA '
Formaldehyde	3.7	(25	(25	(25	NA	NA	(25	NA ·	, NA	(25	(25	(25	(25	NA	NA	(25	, NA	(25
Coliforn		(26	(20	(20	NA	NA.	(20	€.	(2.0	_NA	NA	iaA	NA	NA	NA	17	(2.0	(2.€
pH (UNITS)	5- 9	6.4	6.2	3.6	6.8	6.9	6.8	6.8	6.8	5.8	5.8	6. 1	5. 1	5.2	6.0	5.8	7.0	6.8

NOT ANALYZED. SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C. ALL SAMPLE CONCENTRATIONS IN PARTS PER MILLION (ppm).



TABLE 36 (CONTINUED) SUMMARY OF INDRGANIC METALS, PETROLEUM HYDROCARBONS, FORMALDENYDE, COLIFORM, AND AM GROUND WATER ANALYTICAL RESULTS ECRA AND NUMBES MONITOR WELLS NUMBES INC. - FORDS, NEW JERSEY

***************	**********	*********	********	******	********	********						*********		********	********	*********	*******
HELL NEMBER	• ECRA •	916S •	916D +			819D •	R205 +		M215 +	M210 •	McCS +	M22D •	M235-2 +	D2SAS •		DCSD ·	6265
sample date	+GUIDELINE	9/25/87 •	9/25/87 •	9/28/87 *	9/28/87 •	10/2/87 •	9/24/87 •	9/24/87 •	9/23/87 •	9/23/87 •	9/23/87 •	9/23/87 •	9/23/87 4	9/24/87 •	9/24/87 .	9/24/87 +	9/28/87
**************	*****	*********	*******	*******	********	********	*********	*********	********		********	********	********	********		********	******
PARAMETER	•																
******************	***																
INCREANICS:			,														Partie.
Antimony		(0.020	(0, 020	NA	NA	(0. 828	(0.020	(0.020	NA	NA	NA	NA	(8. 320	(0.020	0.026	(0.020	N
Arsenic	0.65	(0.0 10	(0. 010	NA	. NA	(0. 918	(0.010	(0. 0 1 0	9. 078	0.021	0.06 1	(0. 010	0.0 67	(0.010	(0. 010	(8, 918	(₿. €
Barium	1.0	NA .	NA.	MA	NA	NA_	NA.	, NA	0. 38	0.41	0.43	ð. 33	NA .	, NA	NA ·	NA .	8, 43
Beryllium		(0.005	(0.005	NA	NA	(0.005	(0.005	(8.005	NA	NA	NA	, NA	(0.005	(9. 805	(0.005	(0.905	NA.
Cadhiya	9.01	(0.002	(0.002	NA.	NA	0.006	(0.062	(0.002	(9. 01	(0.992	(0.002	(9. 002	(0.002	(0.002	(9.982	(0.002	(0.002
<u>Dironius</u>	ř.65	(6. 01	(0.01	NH	MA .	(6.01	(8. 81	(8. 61	(0, 01	(0.01	(0.01	(0.81	(0.01	(0.01	(8. 61	(0.01	(0.01
Copper	1.0	(0.020	(0, 626	NH MA	761	(0.020	(9. 929 NA	(0, 02 0 NA	, NA .	, REH	, NA	, NA	(3. 220 NA	(0.028 NA	(8.828 NA	(0.6 26 NA	1.1
Iron		(0.965	(8, 665	POL NO	NO.	NA (0.965	(0.005	(0.005	(9. 865	(8.865	19 (0. 885	18 (8.88 5	(0.005	(8. 885	(0.005	(8.885	(0.005
Lead	8.65	10.003	MA	- NA	NA NA	NG.	NA NA	NA	0.35	0.042	9.61	0.090	NA	NA	NA	NA	0.095
Hanganese Hercury	8.002	(0.9062	(8. 6062	(8. 0002	(8.0002	(8, 8662	(0.0002	(0.9962	(8. 9982	(0.0002	(8, 8862	(0.0002	(8.0002	(0. 3332	(9. 8002	(0.0002	(0.0002
Nickel	•••	, C. 660	(8. 646	NA	NA.	(8.848	(0.040	(8. 848	NA	NA.	NA	NA	(0.04)	(0. 648	(8.848	(8. 848	NA
Selenium	0.01	(9.985	(0.005	NA	MA	(0.995	(0.005	(9. 985	(0.005	(3.085	(0. 985	(0.005	(0. 335	(0.005	(0.005	(8. 885	(9.005
Silver	0.85	(0.018	(0.018	ÑÃ	ÑÄ	(0.010	(0.010	(8. 010	0.018	(0.818	(0.010	(0.010	(0. 010	(0.018	(0.010	(9.010	(0.018
Sodium		NA	MA	NA	NA	NA	NA.	NA	93	77	62	190	FIN:	NA	. NA	NA	12
Thallium		(8.010	(0.018	NA -	. NA	(8, 828	(0. 016	(0. 010	NA NA	NA	NA	NA	(0.010	(0.010	(0.010	(8.010	NA
linc	5.0	0.14	0.022	NA	NA	8. 688	(0.020	0. 628	NA	NA	NA	NA	ð. 8 64	0. 033	(8. 828	0.041	NA
Petroleum Hydrocarbons	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA .	NA	NA
Formaldehyde		(25 (28	(25	(25	(25	ස	125 120	(25 (28	NA	NA	NA .	NA	,	(25	(25	(25	, NA
Coliforn		(28	(26	NA	NA	23	(20	(28	9+	(2.6	(2.0	5++	30+++	80	170	_NA	(4.0
pH (LB(ITS)	5-9	3.7	6.1	5.8	6.2	7.4	6.4	6.6	6.4	7.0	6.6	6.8	6.6	6.8	7.3	5.8	5.7
•																	

NA - NOT ANALYZED.

***NOTE - THE MAMBER OF POSITIVE TUBES IN THE 10 ML SAMPLE PORTION WAS 2.

***NOTE - THE MAMBER OF POSITIVE TUBES IN THE 10 ML SAMPLE PORTION WAS 1.

***ONDTE - THE MAMBER OF POSITIVE TUBES IN THE 10 ML SAMPLE PORTION WAS 5.

***SAMPLE WAS LOST IN LABORATORY ACCIDENT.

**SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

**ALL SAMPLE CONCENTRATIONS IN PARTS PER MILLION (ppm).

TABLE 36 (CONTINUED) SUMMARY OF INDREANIC METALS, PETROLEUM HYDROCARBONS, FORMALDEHYDE, COLIFORM, AND PH GROUND WATER ANALYTICAL RESULTS ECRA AND NJPDES MONITOR WELLS NUODEX INC. - FORDS, NEW JERSEY

****************	 	********	*******	*******	*******	*********	********	********	*********	********	*******	********
HELL NUMBER	• ECRA •	626D +	B270 9/29/87	• F295 • 9/39/87	• F290 • 9/30/87	• L305 • 9/29/87 •	1300 ± 9/29/87 ±	9/25/87 #				£39\$9/29/87
*****************	************	*********	******	********	*********	********	*********	********	********	*******	*******	********
PARMETER	•											
*********************	1889											
INORGANICS:		•		•	•							-
Antimony		(0.020	MA	NA	NA	NA	NA	(0.020	(0.020	(0.020	NA	NA
Arsenic	6.65	(0.010	-NA	NA	NA	NA	NA	(0.010	(0.810	(0.010	NA	· NA
Barium	1.0	NA -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium		(0.005	NA	NA	NA	NA	NA	(0.005	(0.005	(0.005	NA	NA
Cadmium	6.01	(0.002	NA	NA	NA	NA	NA	(8.00 2	(0.002	(0.002	NA	NA
Chronium	0.05	(0.01	NA	NA	NA	NA	NA ·	(0. 81	(0.01	(0.01	NA	- NA
Copper	1.0	(0. 020	NA	NA	NA	NA ·	NA	0. 058	(0.020	(2.020	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NG	NA	NA	NA
Lead	0.85	(0. 965	NA	NA NA	NA	NA	NA	0.00 9	(0. 205	J. 406	, NA	NA
Manganese		NA	NA	NA ·	NA	NG	NA	NA	Nei	NA.	NA	NA
Mercury	8.882	(8. 6682	NA	NA	NA	(8.9992	(0. 886 2	(0. 000 2	(0. 8882	(0. 030 2	NA	NA
Nickel*		(8. 848	NA:	NA	NA	NA	NA	0.060	(0. 040	(0. 040	NA	NA
Selenium	0.81	(0. 965	NA	NA	NA	NA	NA	(0.905	(0.005	(0. 20 5	NA	NA
Silver	8.85	(8. 010	NA	NA	NA	NA	NA	(0.010	(0. 010	(0.010	NA	NA.
Sodium		NA	NA	NA	- NA	NA	NA	NA	NA	NA	NΩ	NA
Thallium		(8.010	NA	NA	NA	NA	NA	(0.010	(0. 618	(0.010	NA	NA
Zinc	5.0	(8. 628	NA	NA	NA	NA	NA	0.34	(0.050	4. ن	NA	NA
Petroleum Hydrocarbons	1.0	NA	NA	NA	NA	NA .	NA	NA.	NA	NA	(1.0	1.5
Formaldehyde		(25	NA	(25	(25	(25	(25	!.	(25	:	NA	NA
Colifora		NA	NA	NA	NA	NA.	NA	NA	NĤ	F44	NA	NA
pH (UNITS)	5-9	5. 0	3.6	6.8	5.2	3.2	5.4	3.5	5.6	5. 2	*	6.1

NOT ANALYZED
 SAMPLE MAS LOST IN A LABORATORY ACCIDENT.
 A NON-PRESERVED SAMPLE MAS NOT RECEIVED FOR THIS ANALYSIS.
 SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.
 ALL SAMPLE CONCENTRATIONS IN PARTS PER MILLION (ppm).

TABLE 38 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS. LEACH FIELDS NUODEX INC. - FORDS. NEW JERSEY

SAMPLE DEPTH (Inches)	************** BLDG. 56-S GRAB AT 42 8/7/87	* GRAB AT 34 .* * 8/7/87 *
(NORGANICS:		
Arsenic Beryllium Cadmium Chromium Chromium Copper Lead Mercury Nickel Selenium Zinc Total Phenols BASE/NEUTRAL ORGANICS:	10 0.34 1.1 16 58 83 0.11 8.3 0.80 49 2.40	17 ND 4.2 8.8 38 110 0.38 16 0.73 67 ND
Acenaphthalene Anthracene Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (a) pyrene Bis (2-Ethylhexyl)phthalate Chrysene Fluoranthene Fluorene Phenanthrene Pyrene	13 12 21 34 34 31 ND 28 57 15 50 38	ND ND ND 1 ND ND ND ND ND ND ND ND ND ND ND ND ND
BASE NEUTRAL PRIORITY POLLUTANT TOTAL	333	2.

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm). "ND" NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

SUMMARY OF 5-51 TRENCH SUMPLY ORDER HIS OFTS SAMPLE ORDER THE HIS OFTS SAMPLE OF SAMPL

TEST TREMUN	. 01	a .	83	84	es.	• • • •	67	89	87		COMPOSITE
SAMPLE DATE Address and an and an anternation of the control of th	ince i	9. 19.	9/2/87		-	_		9/2/87		9/2/8	1,2,7,8,9 9/6/8/
MARANETEPS **************************	4				*						
INORGANICS:			•							•	
Otal Tyanide Petroleum Hydrocarbens iotal Phenris intamony lesenic terpilium addanum hromium opper ead tercury ickel jelenium ilver hallium	10 3L8. 4 10. 3 1. 5 18. 0 23. 8 3. 8 0. 9 48. 0 ND 0. 6 ND	ND 100.0 0 100	10 239.8 7,4 10 176.9 1.5 4,9 106.0 259.8 159.8 1.7 45.0 1.9	ND 60.0 60.0 811.0 8.1 16.0 16.0 17.0 8.1 8.2 8.2 8.0 8.4 8.6	ND 169. 9 0.2 15. 6 1.8 6.5 9 1760. 8 5.7 ND ND S56. 6	ND 3289.8 10.0 ND 3.3 4.4 28.8 28.8 9788.8 9788.8 ND 55.8 ND	ND 128.0 14.0 ND ND ND ND ND 15.0 9.1 ND 9.7 ND 8.7	NO 148.8 9.8 NO 14.6 9.6 14.8 27.0 120.0 9.6 7.8 NO 9.1	NO NO . 7 NO . 2.2 NO . 3.8 11.0 8160.8 NO . 2.2 NO . 2.2 NO . 2.2 NO . 29.0 NO . 29.0	NA 439. d ND 14. d 1. d 21. 0 51. 0 1200. 0 1. 6 42. 0 ND 3. 2 NO	ND 110.0 7.6 65.0 19.0 ND 6.6 27.0 110.0 4300.0 0.8 15.0 ND 6.5 ND 6.5
OLATILE ORGANICS:						•					
hforeform thy literature of using	ND ND NG	ND CM	ND ND ND	9. 8 ND 9. 4	:10 VD VD	ND ND 16. 0	ND ND ND	ND ND . ND	. NO . NO . ON	100 100 - 1.1	ND 0.1 ND
OLATILE PRIOFITY POLLUTANT TOTAL	t4D	ND	ND	1.2	ND	16.0	ND	, (DA)	NO	. 1.1	0.1
OLATILE LIBRARY SEARCH:											
otal lylenes	:40	ND	:aD	0.84	NO	ND .	MD	HO.	ND	ND	0.34
ESTICIDES:						•					
,4' DDD Teldrin ralosulfan li Okapheræ	OH OH OH OH	NB 6. 4 ND ND	ND ND ND 122.0	61.0 ND 24.0 ND	ND ND ND	ND ND ND ND	ND ND ND	ND ND ND ND	NO NO NO	ND ND ND ND	ND ND ND 14.6
ESTICIDE TOTAL	ND	L. 4	122.0	85.0	ND	ND	ND	ND	ND	ND	14.0
CID EXTRACTABLE ORGANICS:											
, 4-Damethy Lphenot enthach Loropheno; Nenot	NL NL NL	2.0 ND 6.1	ND ND toC	NC NC ND	- QM U/A QA	NS ND ND	ND 190 On	ND ND NU	ND ND ND	ND 5. c 1. 5	nd Nd ND
CID EXTRACTABLE TUTAL	ND	3.0	ND	0.1	ND	ND	ND	NO	ND	6.7	ND
RSE/NEUTRAL UNGANTES:						• .		•			
nthracere is ic Ethyricay) puthalate luorene	ND ND Hill	QN QN CA	ND ND NU	ND ND ON	14. B 14. B	ND ::L ND	taC OM TeD	ND ND ND	ND. ND ND	2.3 ND 2.7	HD HD
RSE/NEUTROL FRIORITI POLLUTANT TOTAL	N.	N.	NG	140	14.0	2.11	NG	NO	NO	5. 0	NU
ONSE/NEUTRAL 1886RY SEARCH:						-				•	
hior toluere	, an	ċ. 8	13.6	25. 4	115.3		4.	140	10	391. 3	4.3
P /DXICIT+ COMPOUNDS:	M	16:	NA	:40	NA	NA	tu.	:44	, NA	. 4	•

UNC C PARAMETERS DETECTED IN AT LEAST ONE SAMPLE AND SHOWN ABOVE.
REC CHALLESTRUCTURES ARE IN MARIS PER MILLION (ppm).
NOT NET DETECTED STATE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETO PROVIDED IN APPENDIX B.
NAT NET FORM CITY D.
141 DENVITES CHALL MIRRORING LESS THAN EMA MAXIMUM CECHLEACHAIT CONCENTRATION

6.8 6.5.5.5. 6.5.6.5.7. 1 The Control Lington originaries Partition Friday

for Leading Street,

Paralle State Shines Limits מי על - זישנים

F.S.IICIAC.

PATE . C. . 100 C

#13.4em

_	
•	

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT BY 1 - SITE I OCATION AND INSPECTION INFORMATION

I. IDENT	IFICATION
O1 STATE	C2 SITE NUMBER

PART 1 - SITE	LOCATION AND	INSPE	CTION INFORMA	ATION				
II. SITE NAME AND LOCATION								
03 SITE NAME Letal common professional rename prisite		02 STREET, ROUTE NO OR SPECIFIC LOCATION IDENTIFIER						
Nuodex Inc.	ļ	Industrial Highway						
03 0171		04 STATE		0€ COUNT1	O7COUNTY CE CO!			
Woodbridge Township		NJ	08863	Middlesex	12			
	TYPE OF OWNERSHI							
40° 30°38' N 074° 19' 08'W	I F. OTHER _	_ B. FEL	DEHAL	C STATE C D. COUNTY				
III. INSPECTION INFORMATION								
	VEARS OF OPERATION 192		1005					
ACTIVE X INACTIVE			1985	UNKNOWN				
C4 AGENCY PERFORMING INSPECTION Checks instance	BEGIN	INING YEA	R ENDING YEAR					
_ A. EPA B EPA CONTRACTOR		20 M	INICIPAL TO M	UNICIPAL CONTRACTOR	·			
Aa-	4:11.=			UNICIPAL CONTRACTOR _	(Name of time			
	+	_ G OT	men	rSpet 1				
CHICHIEF INSPECTOR	DE TITLE			07 ORGANIZATION	DE TELEPHONE NO			
Site Inspection Posice	j ·				{)			
Site Inspection Review	10 TITLE			11 ORGANIZATION	12 TELEPHONE NO			
	1				1,			
	İ				1.)			
	<u> </u>				!)			
				}	()			
,								
					()			
	ļ							
·					1, ,			
13 Site REPRESENTATIVES INTERVIEWED	14 TITLE	י	5ADDRESS		16 TELEPHONE NO			
		- 1			()			
		1			()			
	ļ							
	Í				1()			
		Ì			1			
	[- [{()			
'	· ·	1			()			
								
		- 1		. •	()			
	ļ							
,	1	- 1		•				
17 ACCESS GAINED BY 18 TIME OF INSPECTION	19 WEATHER CONDI	TIONS						
☐ PERMISSION								
□ WARRANT								
IV. INFORMATION AVAILABLE FROM	· · · · · · · · · · · · · · · · · · ·							
01 CONTACT	02 OF (Agency Organiza	etion:			03 TELEPHONE NO			
Mark Fisher	NIDED	DIMBA	DICE	• •	609 633-7141			
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	NJDEP	DHWM- T06 ORG	BLSE ANIZATION	07 TELEPHONE NO	08 DATE			
]		-		1 25 00			
Donna Restivo	NJDEP	DH	WM-BPA	609/984-3017	1 , 25, 89			
FPA FORM 2070 13 /7 61:								

ŞEPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 2 - WASTE INFORMATION

I. IDENTIFICATION

OI STATE 02 SITE NUMBER

NJ D002184562

			PART 2 - WAST	E INFORMATIO	N	1 200	2104302
II. WASTES	TATES, QUANTITIES, AN	D CHARACTER	ISTICS			 	
	STATES Cheller for account	02 WASTE QUANT	TY AT SITE	03 WASTE CHARACT	TERISTICS CAREE & Tares	::,	
A SO THE SUIDER THE SE		unknown	T B CORROSIVE F INFECTIOUS T C RADIOACTIVE G FLAMMABLE **R D PERSISTENT H IGNITABLE			VOLATILE SILE FAT BLE	
2 OTHER	S. e.	NO DE DRUME				1 W NOTA	,
III. WASTE 1	TYPE						
CATEGOR	SUBSTANCEN	AME	C1 GEOSS AMOUNT	02 UNIT OF MEASURE	E 03 COMMENTS		
Sir	SLUDGE		unknown		Sludge from	lagoons was	desposite
CLW:	OILY WASTE				in a landfi	111.	
SCL	SOLVENTS		unknown				
PSC	PESTICIDES				'		
ccc	OTHER DRGANIC C-	EM-CALS	unknown				
100	INORGANIC CHEMIC	ALS	unknown				
ACS	ACID5		Ī				
∃∔S	BASES						
MES	HEAVY METALS						
IV. HAZARD	OUS SUBSTANCES	sens kirsim, si fresveri	varez CAS Numzeri				
01 04TEGOR+	DE SUBSTANCE N	AVE	03 CAS NUMBER	04 STORAGE DIS	SPOSAL METHOD	05 CONCENTRATION	DE MEASURE CONCENTRATION
occ	BENZENE		71-43-2	UNKNOWN (GI	ROUNDWATER)	109	PPM
OCC	TOLUENE		108-88-3	PRODUCTION	AREA (SOIL)	1,300	PPM
occ	CHLOROBENZENE		108-90-7	UNKNOWN (G	ROUNDWATER	670	PPB
OCC	ETHYLBENZENE	•	100-41-4	UNKNOWN (GI		705	PPM
OCC BIS	(2-ETHYLHEXY)	PHTHALATE	117=81-7	1 , ,	E (SEDIMENT)	990	PPM
OCC	BENZALDEHYDE	,	100-52-7	HARTMANN's		550	РРМ
OCC	BENZOIC ACID		65-85-0	HARTMANN's	POND (SED.)	3,600	PPM
MES	CHROMIUM			PRODUCTION	AREA (SOIL)	3,800	ррм
MES	ZINC				POND (SED)	2,600	PPM
MES	LEAD		7439-92-1		AREA (SOIL)	1,650	РРМ
OCC ·	PHENANTHRENE		85-01-8	DRUMS (SOII	۲)	130	PPM
MES	MERCURY		7439-97-6	DRUM STORAG	GE AREA (soi	1) 8.5	PPM
OLW	AROCHLOR-1248			PRODUCTION	AREA (SOIL)	17,000	PPM
OCC	1,2,4-TRICHLORO	BENZENE			ARFA (SOIL)	293	PPM
PSD	4,4-DDT		50-29-3	UNKNOWN (SO		0.30	РРМ
occ ·	CHLOROFORM		67-66-3	UNKNOWN (GR	OIMDUATED	57,000	PPB
V. FEEDSTO	OCKS (See Appendix for CAS % - De		<u> </u>	DIVENOMIN TOR	OUNDWALER)		
CATEGORY	O1 FEEDSTOCK	KNAME	02 CAS NUMBER	CATEGORY	01 FEEDSTO	CK NAME	02 CAS NUMBER
FDS			İ	FDS			
FDS			·	FDS			
FDS			<u> </u>	FDS			
FDS				FDS			
VI SCURCE	S OF INFORMATION	specific references le c	State tires: sample analysis i	reports		1	
							
Attachm	ents: B, O, P,	T - NJDEI	P. ECRA FIL	ES .			

ŞEPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 2 - WASTE INFORMATION

I. IDENTIFICATION

NJ STATE 02 SITE NUMBER D002184562

~			PARI 2 - WAST	EINFORMATION				
II. WASTES	TATES, QUANTITIES, AF	D CHARACTER	STICS			,	<u> </u>	
01 PHYSICAL STATES Check at that apply 02 WASTE QUANTITY (Measures of A SOULD E SLURRY)		TY AT SITE reaste quantite : incependen:	O3 WASTE CHARACTERISTICS (Check at that apply I A TOXIC I E SOLUBLE I HIGHLY VOLATILE I B CORROSIVE I F INFECTIOUS I J EXPLOSIVE I C RADIOACTIVE I G FLAMMABLE I K REACTIVE I D PERSISTENT I H IGNITABLE I L INCOMPATIBLE I M NOT APPLICABLE I M NOT APPLICABLE					
. C OTHER	'Scetti	NO OF DRUMS -						
III. WASTE T	YPE			<u> </u>				
CATEGORY	SUBSTANCE	NAME	DI GEOSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS	- , 		
SLU	SLUDGE							
OLW:	OILY WASTE					······································	····	
SOL	SOLVENTS		 					
PSC	PESTICIDES		 					
			ļ	ļ				
000	OTHER ORGANIC C		 	 				
100	INORGANIC CHEMIC	JALS	ļ	 				
ACD	ACIDS /						•	
BAS	BASES		Ļ					
MES	HEAVY METALS		<u> </u>	<u> </u>	<u> </u>			
IV. HAZARD	OUS SUBSTANCES See A	ppend x to timest frequent	victed CAS Numbers	,			T at the color of	
01 CATEGORY	02 SUBSTANCE N	AME	03 CAS NUMBER	04 STORAGE DIS		05 CONCENTRATION	OF MEASURE LE	
MES	ARSENIC			PRODUCTION_			PPM	
OCC	ANTHRACENE	· · · · · · · · · · · · · · · · · · ·	120-12-7	PRODUCTION			РРМ	
PSD	TOXAPHENE		8001-35-2		GE AREA (SC		РРМ	
OCC	TRICHLOROETHY	LENE	79-01-6	PRODUCTION	AREA (SOIL)	830	PPM	
	·						Ī	
					-			
	· · · · · · · · · · · · · · · · · · ·		†	ļ		 	 	
					············			
			 					
			-	 		 	 	
			1	\		 	 	
			ļ —————			 	 	
			 	 			 	
						<u> </u>	 	
		·	L			<u> </u>	<u> </u>	
V. FEEDSTO	CKS (See Appendix for CAS Numb	pers						
CATEGORY	01 FEEDSTOO	KNAME	02 CAS NUMBER	CATEGORY	01 FEEDST	OCK NAME	02 CAS NUMBER	
FDS	,			FDS				
FDS				FDS				
FDS				FDS				
FDS				FDS	·			
VI. SOURCE	S OF INFORMATION ICA	specific references e.c.	State ides, semple analysis	reports* · ·				
					·			
		•						
						•		
1							-	
	•		•				į	

\$EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

O1 STATE O2 SITE NUMBER

N.I. D002184562

II. HAZARDOUS CONDITIONS AND INCIDENTS	
01 X A GROUNDWATER CONTAMINATION C3 POPULATION POTENTIALLY AFFECTED 90,000	02 X OBSERVED (DATE Oct. 1987) T POTENTIAL TALLEGED 04 NARRATIVE DESCRIPTION
	vells has revealed contamination. Benzene, toluene,
	l ethylbenzene were detected in the highest concentration
in the wells. These wells are w	i ^{thin} the Farrington Sand. Groundwater that is used for
drinking draws from the Brunswic	k and Magothy-Raritan Formations. Attachments: 0,P,T
0 % B SURFACE WATER CONTAMINATION OF POPULATION POTENTIALLY AFFECTED unknown	
-	the beds of West and Middle Lakes, and Hartmann's Pond
	nation; however, surface water samples have not been
analyzed. Surface water may be	used for recreational purposes. The site lies along
the Raritan River.	Attachments: P,Q,T 02 DBSERVEDIDATE
03 FORWLATION FOTENTIALLY AFFECTED	02 OBSERVEDIDATE POTENTIAL ALLEGED 04 NARRATIVE DESCRIPTION a potential for air contamination
does not exist. All air polluti	on certificates have been canceled.
	Attachments: S
C1 DI FIRE EXPLOSIVE CONDITIONS	02 DBSERVED (DATE) I POTENTIAL LALLEGED
DV POPULATION POTENTIALLY AFFECTED	04 NARRATIVE DESCRIPTION
	explosive conditions since there are no materials used
on site and operations have ceas	ed.
	Attachment: A
C1 X E DIRECT CONTACT C3 FUHLLATION POTENTIALLY AFFECTED	02 TOBSERVED IDATE) X POTENTIAL TALLEGED
There are contaminated areas suc	ch as Hartmann's Pond, West Lake, and Middle Lake outside
	e fence around the plant area does not extend all the
way to the Raritan River.	Attachment: T
CO X F. CONTAMINATION OF SOIL 174 CO AREA POTENTIALLY AFFECTED 2014	02X OBSERVED :DATE O.Ct. 1987) TOTENTIAL TALLEGED OF NARRATIVE DESCRIPTION
Soil sampling has revealed many	contaminated areas on site.
	Attachments: P,T
· · · · · · · · · · · · · · · · · · ·	
01 XG DRINKING WATER CONTAMINATION 90,000	02 TOBSERVED (DATE) XPOTENTIAL TALLEGED
There is a slight potential for	drinking water contamination. There are public water
	and 3.5 miles southeast of the site.
	,
	Attachments: 0,P,T
01 H WORKER EXPOSURE INJURY C3 WORKERS POTENTIALLY AFFECTED	02 TOBSERVED (DATE:) TO POTENTIAL TO ALLEGED
	04 NARRATIVE DESCRIPTION
The site closed down in 1985; th	erefore, no workers are on site.
	Attachment: A
01 X POPULATION EXPOSURE INJURY SEPOPULATION POTENTIALLY AFFECTED	02 - OBSERVED (DATE) Z POTENTIAL - ALLEGED
	04 NARRATIVE DESCRIPTION sure/injury exists due to groundwater, surface water,
	there is a potential for direct contact.
Also, t	here is a potential for direct contact.
	Attachments: 0,P,Q,T

\$EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

1. STATE O2 SITE NUMBER

NJ D002184562

II. HAZARDOUS CONDITIONS AND INCIDENTS AND INCIDENTS
01 X J DAMAGE TO FLORA 04 NARRATIVE DESCRIPTION 02 X OBSERVED (DATE 7/16/85) T POTENTIAL TALLEGED
Two areas with no vegetation were observed during a NJDEP inspection, one area was between two of the landfills and the other between two salt tanks and Building No. 12. Attachment: H
01 X K DAMAGE TO FAUNA 02 X OBSERVED (DATE 12/8/83) T POTENTIAL TALLEGET 04 NARRATIVE DESCRIPTION CONTRACTOR OF THE POTENTIAL TALLEGET
Nuodex reported a fish kill in a pond adjacent to their property. The pond was used
for the discharge of their cooling water.
Attachment: R
01 % L CONTAMINATION OF FOOD CHAIN 02 I OBSERVED (DATE) X POTENTIAL I ALLEGED 04 NARRATIVE DESCRIPTION
There is a potential for contamination of the food chain; some of the contaminants on
site are bioaccumulative. Attachment: T
0° X M UNSTABLE CONTAINMENT OF WASTES OZ OBSERVED IDATE
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION
Treated effluent wastewater was discharge into unlined lagoons on site. Sludge from one lagoon was disposed in an unlined landfill. Two other landfills, which were unlined taceived unknown material. Although some buildings on site had containment systems, is not known how good they were. Attachments: A. B
01 X N DAMAGE TO OFFSITE PROPERTY C2 L. OBSERVED (DATE
There is a potential for damage to off site property due to contaminants running off
site into surface water or on other property.
Attachment: A,P
C1 X O CONTAMINATION OF SEWERS STORM DRAINS WATES C2 TOBSERVED IDATE POTENTIAL TALLEGES C4 NARRATIVE DESCRIPTION A DOLERATIAL for contamination of the covers
A potential for contamination of the sewer system existed. Treated effluent waste- water was discharged from the lagoons to the Middlesex County Utilities Authority. Attachment: B
01 X P ILLEGAL UNAUTHORIZED DUMPING 02 II OBSERVED (DATE) X POTENTIAL II ALLEGED C4 NARRATIVE DESCRIPTION
Illegal/unauthorized dumping may have occured while the facility was operating.
Attachment: P
05 DESCRIPTION OF ANY OTHER KNOWN POTENTIAL OR ALLEGED HAZARDS
III. TOTAL POPULATION POTENTIALLY AFFECTED: 90,000
IV. COMMENTS
1
V. SOURCES OF INFORMATION Che specific references in gli state thesi sample enalysis reports
Attachments: A, B, H, O, P, Q, T- NJDEP, ECRA FILES
Attachment: R- NJDEP, Bureau of Planning and Assessment
Attachment: S- NJDEP, DEQ, Central Regional Office

\$EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION AND RESCRIPTIVE INFORMATION

I. IDENTIFICATION							
01 STATE	02 SITE NUMBER						
NJ	D002184562						

	PART 4 - PERMI	SITE INS			TION !	NJ D002184562
II. PERMIT INFORMATION	721174 7 271111	T AND DE	JOINT .	THE INTONIA		
	02 PERMIT NUMBER	03 DATE IS	SSUED	04 EXPIRATION DATE	1 05 COMMENTS	
-G1 TYPE OF PERMIT ISSUED (Check a) that acc.						
X A NPDES	0000116	7/15/	/84	7/15/89	To discha	rge storm water to
B UIC						ch and Sling Tail
XC AIR	15053			5/23/86		n May 23, 1986
_ D RCRA	1- 1				Nuodex ca	nceled all air
E. RCRA INTERIM STATUS	·				pollution	certificates.
F SPCC PLAN						
I'G STATE STATE						
TH LOCAL STELL						
ZI OTHER Specie	 				 	
I J NONE	<u> </u>				 	·
III. SITE DESCRIPTION	<u></u>					
	EAMOUNT CBUNIT O	OF MEASURE	04 TRE	ATMENT Check at the	acc.	05 OTHER
	known				,	
I B PILES	INTOWIT		_	NCENERATION	IECTION:	X 'A: BUILDINGS ON SITE
I C. DRUMS, ABOVE GROUND			I B. UNDERGROUND INJECT			
	known	[I D. BIOLOGICAL			
1 1	iknown iknown					OF AREA OF SITE
A P LANDFILL	IKIIOWII		- I F. SOLVENT RECOVERY			174
G. LANDFARM:				OTHER RECYCLING	-RECOVERY	174
I I OTHER			- C H. OTHER			
Spec :-		*				
C7 COMMENTS	1 Sys 2 1					- ·
Both above and below gr	ound tanks we	re used	to :	store raw m	materials,	fuel oils, and
gasoline. Two of the 1	andfills have	been o	bser	ved to have	e pieces o	f drums in them and
the third landfill was	used to dispo	sed slu	dge :	from the la	agoons.	
_			,			
					· Att	achments: B,D,I,J
IV. CONTAINMENT		·			***	
OF CONTAINMENT OF WASTES Check the						
I A ADEQUATE, SECURE	□ B. MODERATE	I C. IN	IADEQU!	ATE, POOR	Z D INSECU	RE, UNSOUND, DANGEROUS
02 DESCRIPTION OF DRUMS, DIKING, LINERS, BAI	RRIERS ETC					
		لمحمما		·	1 1	a1 1 5 ·
Treated effluent wastew lagoons was put into an	arer was disci	uargeu £≟11 '	nto T	two uniine	a lagoons	. Sludge from the
good was put Into an	unillied land.	LITT .	IWO (other unlir	ned landii	lis are onsite.
					** a a b	- A D
				<i>E</i>	ttachment	S: A,D
V. ACCESSIBILITY					·	
01 WASTE EASILY ACCESSIBLE X YES	□ NO					
The fence around the pl	ant area does	not ex	tend	all the wa	v to the I	Raritan River. Also
The lakes and pond are	north of the	fenced	area.		achment:	T
VI. SOURCES OF INFORMATION (Cite speci						
THE TOURSE OF THE CHARACTER SPACE	no vererences e g state tees sam	we energsis. 1900			AND AND ADDRESS OF THE PARTY OF	
Attachments: A, B, D,	I, J, -NNJDEP,	, ECRA	FILES			

\$EPA	PART	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA			I. IDENTIFICATION 01 STATE 02 SITE NUMBER NJ D002184562				
II. DRINKING WATER SUPPL	.Y								
01 TYPE OF DRINKING SUPPLY (Check as applicable			02 STATUS			-	03	DISTANCE TO SITE	
COMMUNITY A	RFACE . =	WELL B X	ENDANGERE A. II D. II	D AFFECTER B. C		MONITORED C. C.			(mi) . (mi)
III. GROUNDWATER							1		
D1 GROUNDWATER USE IN VICINITY	Check one .								
T A ONLY SOURCE FOR DRIN	/ 10 C(RINKING ther sources evened e DMMERCIAL INDUST opther water sources eve	RIAL TRRIGATION	(Lmasc		INDUSTRIAL IRRIGA ces everable	TION	D NOTUSED.UN	IUSEABLE
02 POPULATION SERVED BY GROU	ND WATER 90	,000		03 DISTANCE TO	NEARES	T DRINKING WATER	WELL	3.5	(m.)
04 DEPTH TO GROUNDWATER	CE DIRE	CTION OF GROUND	MATER FLOW	DE DEPTH TO ACL	HER	07 POTENTIAL YIE	LD	OE SOLE SOURCE	E AQUIFER
1 (*.		South		OF CONCERN	(ft)	unknown	(gpd):	I YES	≯ NO
Monitoring wells is in the Magothy well is in the Br	-Raritan	Formation Formations	and acro	oss the R	arit	an River.	The	Edison To	ownship
10 RECHARGE AREA	 		Attachme	nts: 0.P		·			
☐ YES COMMENTS		-		XYES CO	MMENT	s water disc Attac	harge	s into th	ne Rari
IV. SURFACE WATER		· · · · · · · · · · · · · · · · · · ·		INI	ver.	ALLAC	ment	: 0	
01 SURFACE WATER USE CRESS one X A. RESERVOIR RECREAT DRINKING WATER SOU	: ION I RCE	B IRRIGATION, EC		I C. COMI	MERCIA	AL. INDUSTRIAL	<u> </u>	D. NOT CURREN	TLY USED
02 AFFECTED POTENTIALLY AFFEC	TED BODIES OF	WATER							
NAME						AFFECTED	1	DISTANCE TO	SITE
NAME Raritan River						AFFECTED	٠ ـ	DISTANCE TO	SITE Im:
	ek He Lake,	Hartmann	's Pond			######################################	, 99	DISTANCE TO	
Raritan River Crows Mill Cree West Lake, Mide	lle Lake,		's Pond			=	- 4 - 4	DISTANCE TO	tm: (m)
Raritan River Crows Mill Cree West Lake, Mid	lle Lake,		's Pond		02	=	9		(m:
Raritan River Crows Mill Cree West Lake, Mide V. DEMOGRAPHIC AND PRO	lle Lake,	MATION LES OF SITE	THREE (3) MILES OF SITE	02	DISTANCE TO NEAR	9		tm: (m)
Raritan River Crows Mill Cree West Lake, Mide V. DEMOGRAPHIC AND PRO 01 TOTAL POPULATION WITHIN ONE (1) MILE OF SITE A 120	PERTY INFOR TWO (2) MII B. 22	LES OF SITE	THREE (3	OF PERSONS		DISTANCE TO NEAR	. 60	JLATION	tm: (m)

The site is located in a highly industrialized area. The nearest homes are 0.60 mile away. Approximately 1 mile from the site the area becomes densely populated.

Map 1

POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

WEPA	PART 5 - WATER, DEMOGRAPH	TION REPORT IC, AND ENVIRONMENTAL DA	NJ D002184562
VI. ENVIRONMENTAL INFORM			
OT PERMEASILITY OF UNSATURATED			
_ A 10-4 - 10	-8 cm sec	C 10 ⁻⁴ - 10 ⁻³ cm/sec ☐ D. GRE	EATER THAN 10-3 cm/sec
02 PERMEABIL TO OF BEDROCK Cres	• one		
☐ A IMPERess mar	MEABLE L B RELATIVELY IMPERMEABLE 120TE om set	E C RELATIVELY PERMEABLE	D. VERY PERMEABLE (Greater man 10 ⁻² cm sec:
03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
75 (ft)	unknown (n)	unknown	
GENET PRECIPITATION	C7 ONE YEAR 24 HOUR RAINFALL	08 SLOPE DIRECTION OF	SITE SLOPE TERRAIN AVERAGE SLOPE
(in)		0.25 % South	0.25
DE FLOOD POTENTIAL	10		
SITE IS IN 100 YEAR FL	OODPLAIN X SITE IS ON BARRIE	ER ISLAND, COASTAL HIGH HAZARD	AREA. RIVERINE FLOODWAY
11 DISTANCE TO WETLANDS : 4. 4-1		12 DISTANCE TO CRITICAL HABITAT (a)	
ESTUARINE	OTHER		• 1 (m·)
A 0 (m	B <u>>1</u> (m.)	ENDANGERED SPECIES	N/A
13 LAND USE IN VICINITY			
DISTANCE TO	•		
COMMERCIAL INDUST	RESIDENTIAL AREAS NATION RIAL FORESTS, OF WILDLIF	NAL STATE PARKS E RESERVES————————————————————————————————	AGRICULTURAL LANDS AG LANDAG LAND
		_	
A0tm:	в 0.60	(mi) c >1	(mi) D > 1 (mi)
14 DESCRIPTION OF SITE IN RELATION	TO SURROUNDING TOPOGRAPHY		
marshland area. T	d along the Raritan River his area of the river is lows to the Raritan River	tidal. On east side	
	·		
	• • •	,	
•			
•			
		•	
		Map 1	
VII. SOURCES OF INFORMATION	DN /Cite specific references le gi, state/files isample analysis, i		<u> </u>
Map 1 - USGS Map Attachments: 0,P,	T- NJDEP, ECRA FILES		
			-
	•		

9	Δ C

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

NJ D002184562

\/	P	ART 6 - SAMPLE AND FIELD INFORMATION	NO ID	002164302
II. SAMPLES TAKEN				·
SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO		03 ESTIMATED DATE RESULTS AVAILABL
GROUNDWATER	102	Mead Compu Chem		Available
SURFACE WATER		Research Triangle Park, NC		
WASTE				
AIR		ETC		
RUNOFF		Edison, NJ	·	
SPILL	<u> </u>		·	
SOIL	378	Princeton Aqua Sciences		Available
VEGETATION		Edison, NJ	- <u>·</u>	
OTHER (SLUDGE)	4		·	Available
III. FIELD MEASUREMENTS T	AKEN			•
				
IV. PHOTOGRAPHS AND MAI	PS			
01 TYPE I GROUND I AERIA	AL-	C2 IN CUSTODY OF	3	
J	ON OF MAPS DEP, ECRA FIL			
V. OTHER FIELD DATA COLL	ECTED Provide harrar ve de	scription (%)		

VI. SOURCES OF INFORMATION Cité specific références e.g. state fres, sample analysis, réponsi

Attachments: B, O, P, T - NJDEP, ECRA FILES

\$ EPA		SITE	L HAZARDOUS WASTE SITE INSPECTION REPORT OWNER INFORMATION	p-17	I. IDENTIFICATION 01 STATE 02 SITE NUMBER NJ D002184562		
II. CURRENT OWNER(S)			PARENT COMPANY #4	SD-CA: e			
C1 NAME		02 D+B NUMBI			09 D+ B NUMBER		
Huls America, Inc.		04-482 -	5909				
DO STREET ADDRESS P G Box PFD . etc		04 SIC CC	DE 10 STREET ADDRESS P 0 80	, RFC - etc ·	11 SIC CODE		
P.O. Box 365, Turner H	Place	286	9				
05 CITY	06 STATE	C7 ZIP CODE	12 CITY	13 STA	TE 14 ZIF CODE		
Piscataway	ŊJ	08855-0	365				
)1 NAME		02 D+8 NUMB	R OB NAME		09 D+8 NUMSE-		
DO STREET ADDRESS / C 8.4 FFC + 61.		04 SiC CC	DE 10 STREET ADDRESS = C 6:	. 657 a. at	1-1-5000		
TO STREET RESPESS TO STREET FOR			TO STREET ADDRESS TO BE				
O5 City	DE STATE	C7 ZIP CODE	12 C:TY	113 STA	TEL 14 ZIP COOF		
O1 NAME		02 D+B NUMB	ER DE NAME		09 0 + B NUMBER		
		<u> </u>					
DB STREET ADDRESS 4 0 8.2 442 4 49 1		G4 SIC CC	DE 10 STREET ADDRESS FC 80	, AFC • esc	1150000		
OS CITY	DE STATE	IST ZIP CODE	12 CIT	113 STA	TE 14 ZIF CCCE		
D' NAME		02 D+8 NUMB	OB NAME		080+8 NUMBER		
03 STREET ADDRESS # D Box RFD # etc		G4 SIC CC	DE 10 STREET ADDRESS FO Bo	BEC # etc -	1 : SIC CODE		
05 CITY	TOE STATE	O7 ZIF CODE	12 CITY	li i sta	TE 14 ZIF COSE		
	CE STATE	O7 ZIP CODE	12011	; 13312			
III. PREVIOUS OWNER(S) List most recent		ł	IV. REALTY OWNER(S)	if approache list most recent his			
C1 NAME		02 D+B NUMB			02 D-B NUMBER		
Nuodex Inc.				•			
03 STREET ADDRESS = C Box AFC + +:		04 SIC C	DDE 03 STREET ADDRESS - 0 8	RFC 4. els -	04 SIC CODE		
Box 365 Turner Place		2869					
05 CITY	1	07 ZIP CODE	05 CITY	OE STA	TE 37 ZIP CCDE		
Piscataway	ŊJ	08855	R 01 NAME		02 D+B NUMBEF		
					025-8115-82		
Tenneco Chemical, Inc		18-144-2		x RFD e, etc :	04 SIC CODE		
Park 80 Plaza West		2869					
D5 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STA	TE 07 ZIP CODE		
Saddle:Brook	ŊJ	07662			1		
D1 NAME		02 D+B NUMB	ER O1 NAME		02 D+B NUMBER		
Heyden-Newport Inc.							
33 STREET ADDRESS (P.O. Box, RFD #. etc.)		04 SIC CC	DE 03 STREET ADDRESS P 0 80	r, RFD#, etc.)	04 SIC CODE		
No longer in existence		1			1		
OSCITY	06STATE	07 ZIP CODE	05 CITY	Inc cra	TE 37 ZIP CODE		

Attachment: A

\$EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

O1 STATE C2 SITE NUMBER

NJ D002 1 845 62

77 E1 / 1			PART 8 - OPERA	TOR INFORMATION	[NJ]	002184562		
II. CURRENT OPERATO	OR (Prayage if different fro	m owner.		OPERATOR'S PARENT COMPANY III ADDRESSIO				
01 NAME		[02 D+B NUMBER	10 NAME		11 D+B NUMBER		
03 STREET ADDRESS -F C 6	or RFD = etc -	Ł	04 SIC CODE	12 STREET ADDRESS (P O Box. RFG + etc.,		13 SIC CODE		
01.01		Toe exact!	07 ZIP CODE					
05 CITY		USSIAIE	O7 ZIP CODE	14 CITY	ISSTATE	16 ZIP CODE		
DE YEARS OF OPERATION	09 NAME OF OWNER	· · · · · · · · · · · · · · · · · · ·			·			
III. PREVIOUS OPERAT	OR(S) List mast recent t	lirst, provide only	rd different from owners	PREVIOUS OPERATORS' PAREN	IT COMPANIES	arriver :		
01 NAME			02 D+B NUMBER	10 NAME	·	1 D+B NUMBER		
C3 STREET ADDRESS .+ 2 60	c + RFS # #IC		04 SIC CODE	12 STREET ADDRESS (F.O. Box. RFD +, etc.:		13 SIG CODE		
05 CiT+		06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP COSE		
OB YEARS OF OPERATION	09 NAME OF OWNER	DURING THIS	PERIOD		<u>_</u>	<u> </u>		
01 NAME		[02 D+B NUMBER	10 NAME		ti Des Noyses		
03 STREET ADDRESS : F O &c	» RFC *. etc .		04 SIC CODE	12 STREET ADDRESS FO Box RFD . etc.		13 SIC CODE		
05 CITY	 	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIF CODE		
08 YEARS OF OPERATION	09 NAME OF OWNER	DURING THIS	PERIOD			<u> </u>		
O1 NAME	<u>}</u>		02 D+B NUMBER	10 NAME		11D+BNUMEET		
03 STREET ADDRESS P O Bo	± RFD # ⊕IC .	L	04 SIC CODE	12 STREET ADDRESS (P O Box RFD = etc.)	 '	18 8/6 6008		
05 CITY		06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIF CODE		
OB YEARS OF OPERATION	09 NAME OF OWNER	DURING THIS	PERIOD					
IV. SOURCES OF INFO	RMATION -Cité specifi	ic references e	g. state files, sample analys	is, reports.				
				·····				
			,					
	•					4 00° 4 4		
·				•				

OFDA	POTENTIAL HAZARDOUS WASTE SITE		OLSTATE OZ SITE NUMBER NJ D002184562			
\$EPA	SITE INSPECTION REPORT PART 9 - GENERATOR/TRANSPORTER INFORMATION					
II. ON-SITE GENERATOR	1 2011	-				
01 NAME		02 D+B NUMBER				
			-			
C3 STREET ADDRESS P.C. BOX RFD:C		04 SIC CODE	7	* .	*	-
				•	•	
05 CITY	06 STATE	07 ZIP CODE	7			
	<u> </u>	<u> </u>		· · · · · · · · · · · · · · · · · · ·		
III. OFF-SITE GENERATOR(S)			10		·	
01 NAME		02 D+B NUMBER	C1 NAME			C2 D+B NUMBER
03 STREET ADDRESS F.O. Box. RFD + +10	· · · · · · · · · · · · · · · · · · ·	04 SIC CODE	03 STREET ADD	DRESS :P O Box RFD + etc.,		04 SIC CODE
		:				
05 CIT 1	GE STATE	D7 ZIP CODE	05 CITY		06 STATE	67 ZIP CODE
				·		
O1 NAME		C2 D+B NUMBER	01 NAME		,	02 D+8 NUMBEF
03 STREET ADDRESS = 0 Bir AFD = etc		04 SIC CODE	03 STREET AD	DRESS F O BC+ AFE + +10		04 5/5 655:
05.07	Ine STATE	07 ZIP CODE	100.00	····	TOE STATE	O7 ZIF CODE
05 CITY		O. Zie CODE	05 CITY		UC SIA'E	U- 21F UUUE
IN TRANSPORTEDIS	<u> </u>	<u> </u>				<u> </u>
IV. TRANSPORTER(S)		102 D+B NUMBER	C1 NAME .	·	 -	02 D-B NUMBEF
03 STREET ADDRESS IF O Box RFD # etc	·	G4 SIC CODE	03 STREET ADD	DRESS FO Box RFC . etc		04 SIC CODE
05 CiTh	06 STATE	07 ZIF CODE	05 CITY		06 STATE	D7 ZIP CODE
		}		<u> </u>		
01 NAME		02 D+B NUMBER	01 NAME	•		02 D+B NUMBER
03 STREET ADDRESS (F.O. Box. AFD +, etc.		04 SIC CODE	03 STREET ADI	DRESS (P.O. Box RFD + etc.)		64 SIC CODE
05 CITY	IO6 STATE	07 ZIP CODE	05 CITY		IO6 STATE	07 ZIP CODE
			030,117		,	0 2 F 0000
V. SOURCES OF INFORMATION ICHE Specific			<u></u>	- : ': -::::::::::: -:		
V. SOUNCES OF INT CHRISTION TERESPOENT	rererences.	e g., state mes, sample analysis.	reports		 	
				•		
				-		
,	•					
•			•			
			•			
	•	•				
EPA FORM 2070-13 (7-81)						

^	_	
	_	$\boldsymbol{\mu}$
7/	_	

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

N.I DO02184562

VLIA	PART 10 - PAST RESPONSE ACTIVITIES	NJ D002184562
II. PAST RESPONSE ACTIVITIES	N/A	
01 TA WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	
01 E B TEMPORARY WATER SUPPLY PROVIDE 04 DESCRIPTION	ED 02 DATE	03 AGENCY
01 T C PERMANENT WATER SUPPLY PROVIDE 04 DESCRIPTION	ED 02 DATE	03 AGENCY
01 II D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 I E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
01 T F WASTE REPACKAGED 04 DESCRIPTION	C2 DATE	03 AGENCY
01 I G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY
01 TH. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY
01 III. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 T J IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	O3 AGENCY
01 Z K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 T. L. ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY
01 Z M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 I N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY
01 C O EMERGENCY DIKING SURFACE WATER 04 DESCRIPTION	DIVERSION 02 DATE	O3 AGENCY
01 C P CUTOFF TRENCHES SUMP 04 DESCRIPTION	02 DATE	03 AGENCY
01 C O SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY

	-	\Box
\sim	-	
_		

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES

I. IDEN	TIFICATION
01 STATE	02 SITE NUMBER
NJ	D002184562

YEFA	PART 10 - PAST RESPONSE ACTIVITIES	NJ D00218456
PAST RESPONSE ACTIVITIES COMMUNICE. N	/A	
01 TR BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	O2 DATE	03 AGENCY
<u> </u>		i
01 T S CAPPING COVERING	02 DATE	03 AGENCY
04 DESCRIPTION	•	•
01 T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	03 AGENCY
0: I U GROUT CURTAIN CONSTRUCTED	O2 DATE	D3 AGENCY
04 DESCRIPTION	-	
01 I V. BOTTOM SEALED	O2 DATE	03 AGENCY
04 DESCRIPTION	•	
01 T W. GAS CONTROL 04 DESCRIPTION	02 DATE	03 AGENCY
01 _ X FIRE CONTROL	O2 DATE	03 AGENCY
04 DESCRIPTION		
01 T Y LEACHATE TREATMENT 04 DESCRIPTION	O2 DATE	
	·	· . ·
01 II Z AREA EVACUATED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 T 1 ACCESS TO SITE RESTRICTED	O2 DATE	03 AGENCY
04 DESCRIPTION		
01 T 2. POPULATION RELOCATED 04 DESCRIPTION	O2 DATE	03 AGENCY
01 Z 3 OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY
	and the second second	

III. SOURCES OF INFORMATION (Cité specific references e.g. state files sample analysis, reports)



POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION

L IDENTIFICATION
ONSTATE OF SITE NUMBER 002184562

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION T YES X NO

02 DESCRIPTION OF FEDERAL, STATE LOCAL REGULATORY ENFORCEMENT ACTION

N/A

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample enalysis, reports)

Facility Name: Nuodex a. K.a. Tenneco Chemicals
Location: Woodbridge Township, Middlesex County
EPA Region: 2
Person(s) in Charge of the Facility:
Name of Reviewer: D. Restivo Date: 3/22/89
General Description of the Facility:
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.) Nuodex has landfills, lagoons, Storage tanks, and a former drum storage
building on site.
Scores:
HRS Sy = 15.05 (Sy = 23.27 Sy = 11.695a = 0.00)
PRO SH = 34.43 (Sg = 38.77 Sg = 15.94 Sg = 42.31)

HRS COVER SHEET

-	·	Ground Water	Route Work Sheet		unswici ormati		
	Rating Factor	Assigned (Circle		Multi- plier	HRS	Max. Score	PRO
	1 Coserved Release	0	45	1	٥	45	45
		e is given a score of 45, pro e is given a score of 0, pro					
	Route Characteria Depth to Aquiler Concern	of 0 (1) 2		2	2	6	
	Net Precipitation Permeability of to Unsaturated Zoo	ne 01②	3	1	222.3	3	
	Physical State	0 1 2 (Total Route Char		1	9	15	
	Containment	0 1 2(3)	1	3	3 .	
	Waste Characteris Toxicity/Persiste Hazardous Waste Quantity		9 12 15 (18) 3 4 5 6 7 8	1	18	18 8	. 18
		Total Waste Char	acteristics Score		19	26	19
	Ground Water U: Distance to Near Weil/Population Served	est 1 0 4 6	3 8 10 20 33 40	3	6 20	9 40	620
					•		
		Total Targ	ets Score		26	49	26
		multiply 1 x 4 x 5 juiltiply 2 x 3 x 4	x 5		13,338	57.330	02, 830
()	7 Divide line 6 b	57,330 and multiply by 10	0	Sgw-	23.2	7	88.77

Rating Factor		Assigned Value (Circle One)		Multi- plier	HRS	Max. Score	PRO
Observed Release		0 45		1	0	45	45
if observed release	-						
Route Characteristic Facility Slope and		(i) 1 2 3		1	0	3	
Terrain 1-yr, 24-hr, Rainfal Distance to Neare	ı	0 1 2 3		1 2	263	3	
Water Physical State		0 1 2 3		1	3	3	
	Total R	oute Characteristi	cs Score	·	11	15	
3 Containment		0 1 2 3		1	3	3	
Waste Characteristic Toxicity/Persisten Hazardous Waste	:3 ice	0 3 6 9 12 15	5 (B) 5 6 7 8	1	18	18 8	18
Quantity							
Coantry	· ·						·
Coantry	Total W	/aste Characteristi			19	26	19
Targets Surface Water Use Distance to a Sens Environment	e sitive	0 1 2 3	ics Score	3 2	19	9	19
Targets Surface Water Use Distance to a Sen	e sitive	0 1 ② 3			19 000		6
5 Targets Surface Water Use Distance to a Sens Environment Population Served to Water Intake	sitive	0 1 2 3	ics Score		19 69 0	9	6
Surface Water Use Surface Water Use Distance to a Sens Environment Population Served to Water Intake Downstream	sitive //Distance }	0 1 2 3 0 1 2 3 6 4 6 8 12 16 18 20 14 30 32 35	ics Score		0	9 6 40	6 6 0
5 Targets Surface Water Use Distance to a Sensenvironment Population Served to Water Intake Downstream 6 If line 1 is 45, m If line 1 is 0, mu	sitive // Distance // Distance // Distance // Distance // Distance	0 1 2 3 0 1 2 3 6 4 5 8 72 16 18 20 24 30 32 35 Total Targets Sco	10 40	1	0	9 6 40 55 64,350	660
3 Targets Surface Water Use Distance to a Sens Environment Population Served to Water Intake Downstream 5 If line 1 is 45, m	sitive // Distance // Distance // Distance // Distance // Distance	0 1 2 3 0 1 2 3 6 4 5 8 72 16 18 20 24 30 32 35 Total Targets Sco	10 40	1	6 0 12 7,524	9 6 40 55 64,350	12

	AIR ROUTE WORK SHEET									
	Rating Factor	Assigned Value (Circle One)	Multi- olier	HRS	Max. Score	PRO				
0	Observed Release	0 45	1	0	45	45				
	Date and Location:									
	Sampling Protocol:					-				
	If line 1 is 0, the S = 0 If line 1 is 45, then pro	. Enter on line 5 . caed to line 2 .				,				
2	Waste Characteristics Reactivity and Incompatibility Toxicity Hazardous Waste Quantity	0 ① 2 3 0 1 2 ③ 0 ① 2 3 4 5 8 7 8	1 3		3 9 8	1 9				
		Total Waste Characteristics Score			20					
3	Targets Population Within	0 9 12 15 18 21) 24 27 30 0 1 2 3 0 1 2 3	1 2 1		30 5 , 3	21 6 3				
1	Multiply 1 x 2 x 3	Total Targets Score		-	39 35,100	30 14,850				
<u></u>	Divide line 4 by 35,100	and multiply by 100 Sa =), <i>0</i> 0		12.3				

· Same section of

HRS	\$	52
Groundwater Route Score (Sgw)	23,27	541.49
Surface Water Route Score (S _{SW})	11.69	136.66
Air Route Score (Sa)	0.00	0.00
$s_{gw}^2 + s_{sw}^2 + s_a^2$		678.15
$\sqrt{s_{qw}^2 + s_{sw}^2 + s_a^2}$		26.04
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		15.05

WORKSHEET FOR COMPUTING SM

PRO	S	s²
Groundwater Route Score (S _{gw})	38.17	1503.11
Surface Water Route Score (S _{SW})	15.94	254:08
Air Route Score (Sa)	42.31	1790.14
$s_{gw}^2 + s_{sw}^2 + s_a^2$		3547.33
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$		59.56
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2} / 1.73 = s_M =$		34.43

worksheet for computing $s_{\mathbf{M}}$

SITE INSPECTION REVIEW FORM

SITE NAME: NUODEY TNC Tennew - Hey	DIVISION
ALIASES: NVODET INC. JEMMES - Hey	Den
SITE I.D. #: NJD0022194562	
	9,
ITEM	COMPLETE ? YES NO*
SITE LOCATION (INCLUDING MAP)	<u> </u>
SITE BACKGROUND	<u> </u>
ENVIRONMENTAL SETTING (GEOLOGY, HYDROLOGY, METEOROLOGY, ECOLOGY + LAND USE)	<u> </u>
WASTE DESCRIPTION (PRESENCE + CONDITION OF WASTE + WASTE MANAGEMENT UNITS)	<u> </u>
LABORATORY RESULTS (CORRELATED TO SAMPLE LOCATION MAP)	<u></u>
HRS PRE - SCORE (PRELIMINARY + PROJECTED)	<u> </u>
POTENTIAL FOR DIRECT CONTACT	<u> </u>
CONCLUSIONS + RECOMMENDATIONS	
REFERENCES	
HRS PRE-SCORE: PRELIMINARY SCORE = 15.65	· .
PROJECTED COOPE	. *

OMMENTS:					
extensive sa	mplin	prop	ar un	de qui	le
ly the NTDE	D DHW	n, Bis	E Bure	ou of	
Industrial Lite	Evalua	tion (B	nse)		
by The NJDE, Industrial Lite RIFS is preing	Devel	ped le			
Wosep (•	
Defer -	to NIDI	20			
		U			
,	^.				
			· .		
					_
					_

REVIEWED BY:

D. Mail

DATE: 5-31-85

*IF ANY ITEM IS LACKING INFORMATION PLEASE DESCRIBE IN COMMENTS



NUODEX INC.

a.k.a. TENNECO-HEYDEN DIVISION INDUSTRIAL HIGHWAY

WOODBRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY EPA ID NO. 002184562

INDEX OF ATTACHMENTS

MAPS

- 1. USGS Perth Amboy Quadrangle
- 2. Hagstrom Middlesex County Road Map
- 3. Woodbridge Township Tax Map
- 4. Site Map
- 5. New Jersey Atlas Sheets 25 and 26
- 6. New Jersey Atlas Geologic Overlay and Legend
- 7. New Jersey Atlas Water Supply Map
- 8. Water Withdrawal Points Map

ATTACHMENTS

- A. ECRA: General Information and Site Evaluation Submissions for the Environmental Cleanup Responsibility Act, Volume 1 Main Submission, April 25, 1985.
- B. ECRA: Closure and Post-Closure Plans for the Settling Lagoons at the Nuodex Fords Facility, September 1985.
- C. ECRA: General Information and Site Evaluation Submissions for the Environmental Cleanup Responsibility Act, Volume 4 Landfill/Sludge Lagoon and Off-Site Contamination Data, April 25, 1985.
- D. ECRA: Princeton Aqua Science, Metal Detection Survey
- E. ECRA: Closure Plan, Hazardous Drum Storage Building, Final Draft, September 9, 1985.
- F. DEQ, Central Regional Office: Memo from Walter Olenick to George Tyler, March 5, 1979.
- G. DEQ, Central Regional Office: Two memos concerning the December 3, 1984 release of phosphorus oxychloride.
- H. ECRA: BISE, Report of Inspection by Vincent Nykiel, July 16, 1985.
- I. ECRA: Letter from John Wnek, Princeton Aqua Science, to Maria Petix-Kent, NJDEP, BISE, June 26, 1985.
- J. ECRA: Letter from John Wnek, Princeton Aqua Science, to Vincent Nykiel, NJDEP, BISE, July 24, 1985.

ATTACHMENTS (cont.)

- K. DWR- Central Regional Office: Letter from John Trela, NJDEP, DWR, to Nuodex Inc., June 15, 1984.
- L. DWR- Central Regional Office: Letter from Paul Kurisko, NJDEP,

DWR, to John Mahon, Nuodex,

March 7, 1985.

M. DWR- Central Regional Office: Letter from John Trela, NJDEP, DWR,

to Mario Ceprini, Nuodex,

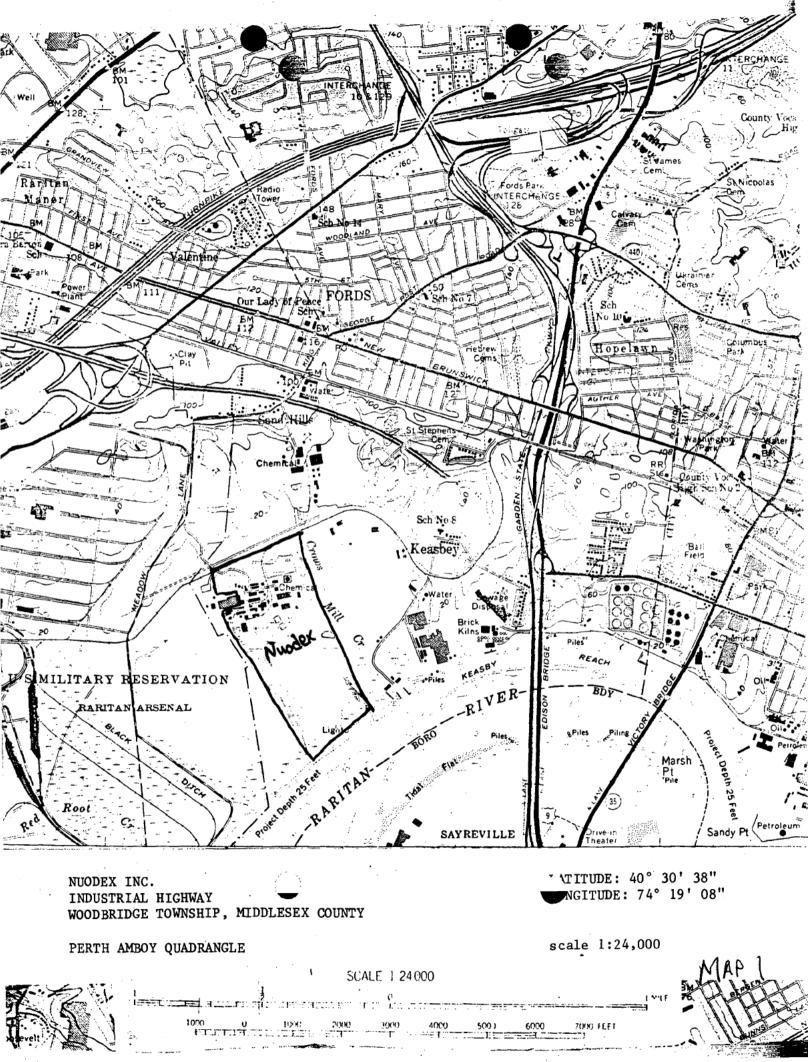
March 19, 1986.

N. DWR- Central Regional Office: Letter from Alfred Valencia, NJDEP,

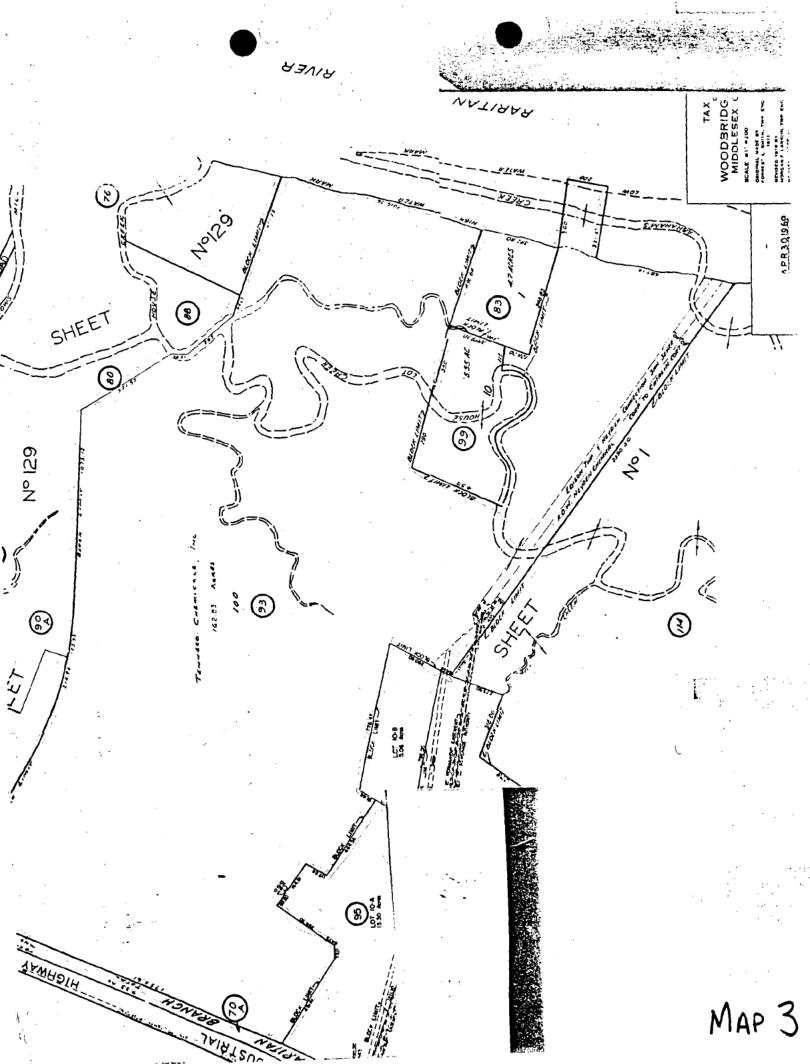
DWR, to John Wnek, Nuodex,

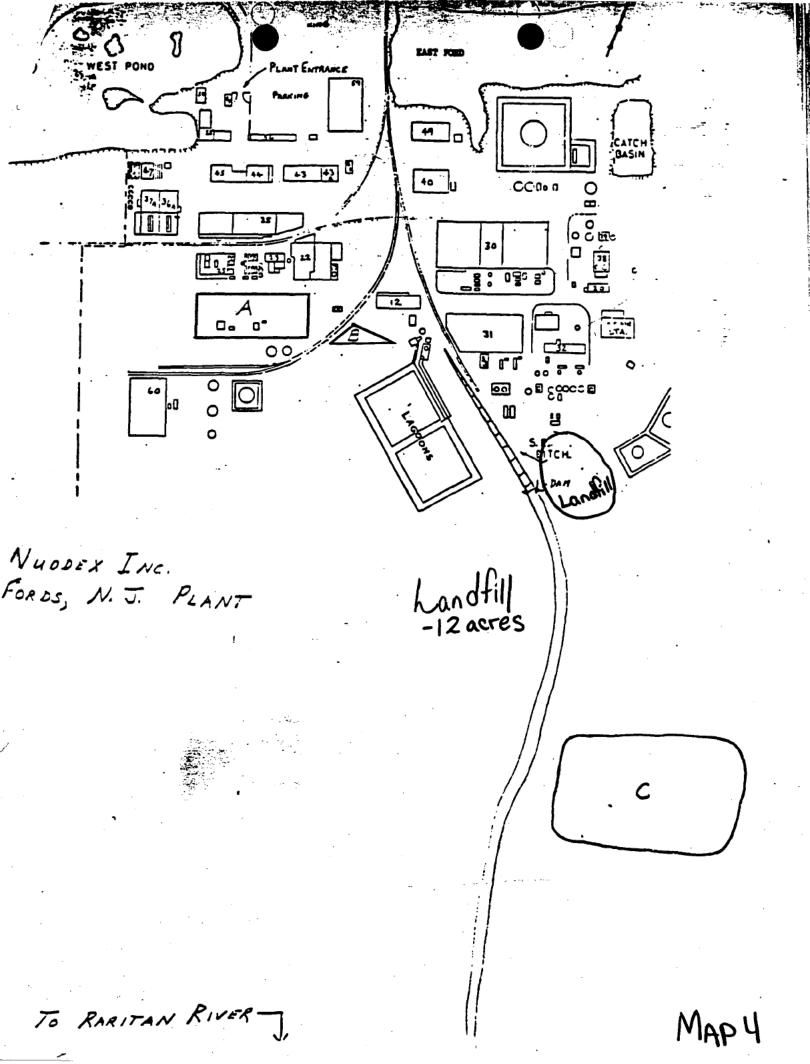
June 3, 1988.

- O. ECRA: General Information and Site Evaluation Submissions for the Environmental Cleanup Responsibility Act, Volume 3 Groundwater Quality, April 25, 1985.
- P. ECRA: Results of Sampling and Analysis Plan for Compliance with the Environmental Cleanup Responsibility Act, March 3, 1988.
- Q. ECRA: General Information and Site Evaluation Submissions for the Environmental Cleanup Responsibility Act, Volume 2 Surface Water Discharge, April 25, 1985.
- R. BPA: NJDEP, Central Enforcement, Report of Phone Call, December 8, 1983
- S. DEQ- Central Regional Office: Letter from Robert Thierfelder, Nuodex, to William Stephens, NJDEP, Permit Administrator, May 23, 1986.
- T. ECRA: Letter from Calvin Gerhart, IT Corporation, to Michael Metlitz, NJDEP, BEECRA, January 14, 1988.
- U. HWE: Letter from Mario Ceprini, Nuodex, to Richard Baker, USEPA, May 18, 1983.

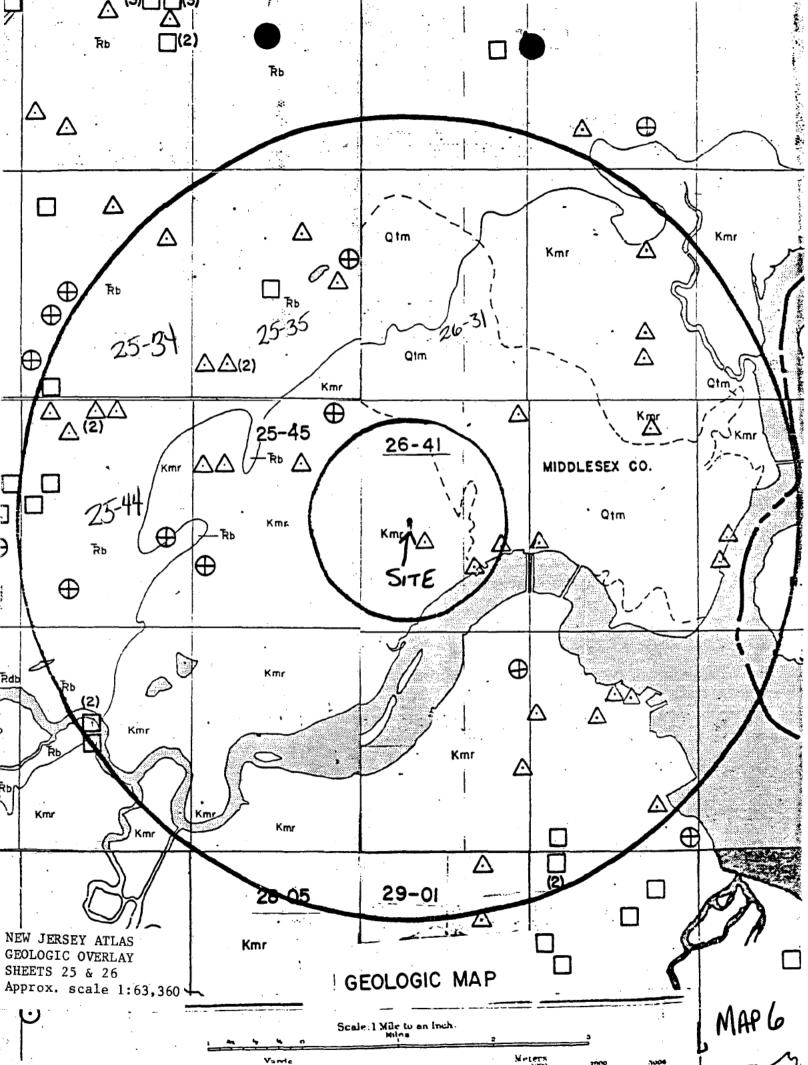










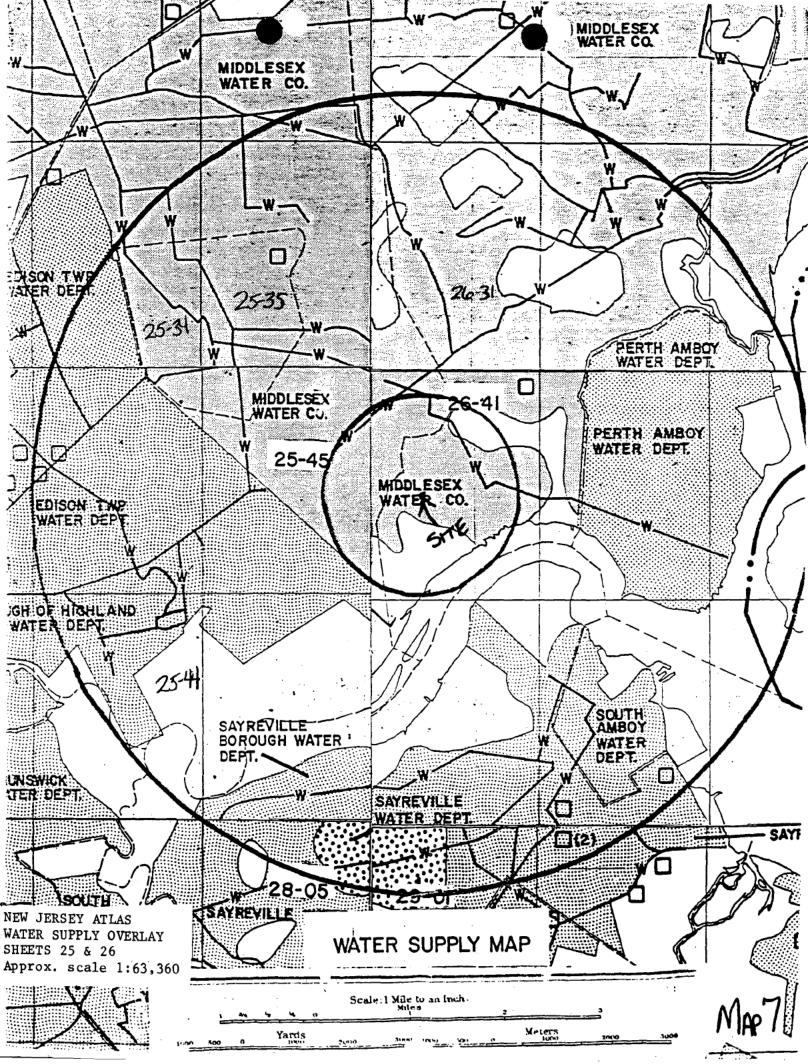


LEGE FOR ATLAS SHEET 2 SEOLOGY)

		!!	
4	<u>s</u> —	INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE (INCLUDING PRIVATE	wells)
(<u> </u>	PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE	•
6	₽ —	UNSUCCESSFUL FOCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE	
G	э —	UNSUCCESSFUL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE	
ſ	+] —	NO TEST - NO DATA ON YIELD	
	- .		
· · · · · · · · · · · · · · · · · · ·		FAULT (DASHED WHERE INFERRED)	
		CONTACT (DASHED WHERE INFERRED)	
	<u> </u>	PHYSIOGRAPHIC PROVINCE BOUNDARY	
		WATER SUPPLY TRANSMISSION LINE	
N		WHERE THE PRECAMBRIAN FORMATION BOUNDARIES TERMINATE ABRUPTLY, IT IS THE GEOLOGIST'S OPINION THAT THE GEOLOGICAL COMPLEXITY OF THE AREA PREVENTS FURTHER INTERPRETATIONS.	
K	mr —	CRETACEOUS MAGOTHY AND RARITAN FORMATIONS (SAND AND CLAY)	
7	ib —	TRIASSIC BRUNSWICK FORMATION	•
. 1	i c	TRIASSIC CONGLOMERATE BEDS OF THE STOCKTON FORMATION	•
7	11	TRIASSIC LOCKATONS FORMATION	
7	db —	TRIASSIC DIABASE	
Ţ	bs —	TRIASSIC BASALT FLOWS	
· S	d —	SILURIAN DECKER LIMESTONE AND LONGWOOD SHALE FORMATIONS	
S	gp	SILURIAN GREEN POND CONGLOMERATE	- 40 - 29
0	mb	ORDOVICIAN MARTINSBURG SHALE	
. e	0k	CAMBRO ORDOVICÍAN KITTATINNY LIMESTONE	
e	h —	CAMBRIAN HARDYSTON SANDSTONE	
		PRECAMBRIAN:	
		Gh-HORNBLENDE GRANITE WITH PYROXENE GRANITE	چ
	- (*)	ga - ALASKITE	•
		am- AMPHIBOLITE	
		PX- PYROXENE GNEISS	
		gng-QUARTZ PLAGIOCLASE GNEISS	:
•		gnb-BIOTITE GNEISS	

sk-skarn, GRAPHITE SCHIST

FORMATION NOT DETERMINED



_I. Water Well Records

Screen	
Setting	

			Setting			
	•	Year	or Depth	Total	g/m	,
Location	Owner	Drilled	of Casing	Depth	Yield	Formation
25-34-111	Plastylite Corp.	1962	40	250	180	Trb
25-34-165	Elizabethtown Water Co.	1966	64	220	350	11
25-34-194	11	1965	40	400	300	tt .
25-34-211	Tepper's Store	1955	38	538	250	tt
25-34-233	Wigton Abbott Corp.	1966	81	400	201	**
25-34-243	Rosenbaum	1700	01	306	230	11
				427	560	**
25-34-246	Tepper Brothers			310		**
25-34-257	Queen City Bottling Co.				146	11
25-34-258	Safeway Stores	3065		303	80	
25-34-275	Elizabethtown Water Co.	1965	, 65	350	400	11
25-34-292	Muhlenburg Hospital			298	160	
25-34-292	;; H			214	160	n
25-34-295		1962	54	502	137	
	Plainfield-Union Water Co.			803	119	"
25-34-311	11		-	~-400	350	11
25-34-311	" .	•		352	500	11
25-34-311	. 11			304	321	**
25-34-311	; !!			353	380	11
25-34-311	11			350	312	11
25-34-341	n n				_	
25-34-341	n ,	1959	114	605	350	11
25-34-345	15	1960	114	350	328	11
25-34-358	"	1959	114	605	350	11
25-34-396	Somlack			263	250	п
25-34-411	Plainfield-Union Water Co.			433	420	11
25-34-411	"			44	300	Ç
25-34-411				400	400	Trb
25-34-411	11			499	350	0.00
25-34-415	National Starch Products			304	400	**
25-34-415	11			304	329	!1
25-34-415	11			44	300	Q
25-34-416	E. Novy & Sons	1969	51	270	200	Trb
25-34-417	Art Color Printing Co.	1505	51	280	325	11.0
25-34-418	Allied Asphalt & Mineral Co.			200		tı
25-34-418		1968	64	600	250	*1
25-34-419	Natl.Starch & Chemical Co.	1900	64		550	11
	Art Color Printing Co.	1065	40	325	226	**
25-34-421	Elizabethtown Water Co.	1965	42	350.	400	
25-34-422	International-Plainfield	*		205	100	11
25 27 722	Motor Co.			395	400	11
25-34-422			•	600	257	11
25-34-423	Elizabethtown Water Co.	1965	84	350	300	H
25-34-424	Natl.Starch & Chemical Co.	1964	71	436	380	
25-34-431	Elizabethtown Water Co.	1965	77	350	450	11
25-34-433	Halsey Nevada Corp.	1954	80	300	130	**
25-34-436	Elizabethtown Water Co.	1965	81	350	400	**
25-34-439	Middlesex Water Co.			300	375	"
25-34-439		•		275	418	**
25-34-457	Thielex Inc.	1965	40	160	65	"
25-34-521	Elizabethtown Water Co.	1966	98	160	65	**
25-34-526	Middlesex Water Co.	1964	111	500	510	**
25-34-531	"	1964	98	500	450	11
25-34-531	tt .			70	1100	Q

		· · · · · · · · · · · · · · · · · · ·		<u> </u>			
	25-34-531	Middlesex Water Co.			70	1800	Ó
٠.	25-34-531	tt			73	1050 1	11
	25-34-531	· ·			74	1700	11
	_	,			300	700	11
	25-34-531	.			305	1050	11
	25-34-531	11	1062		74	242	Trb
	25-34-532	1	1962				11.0
	25-34-533	•	1963	95	101	300	*1
	25-34-533	11			106	-	
	25-34-534	•	1964	38	501	250	: 7
	25-34-534	j'	1964	109	500	730	:1
	25-34-534	H.	1955	63	514	239	, 11
	25-34-534	11	1964	105	501	347	11
	-		1964	97	500	325	11
	25-34-534	1.	1964	57 57	495	358	**
	25-34-537						11
	25-34-538	,	1956	45	608	300	-1
	25-34-539	:	1962	100	421	255	,,
	25-34-552	††	1964	53	501	600	
	25-34-554	Q			526	412	:1
	25-34-554	! •			409	542	:•
	25-34-555			_	-440	465	11
	25-34-555	11	•		525	502-	17
	25-34-556	Keystone Plastics, Inc.	1965	41	300	200	• •
			1964	85	500	370	**
	25-34-556	Middlesex Water Co.					11
	25-34-556		1964	51	500	600	11
	25-34-556		1964	58	504	400	
	25-34-557	Keystone Plastics, Inc.	1965	40	300	200	:1
	25-34-583	Spicer Mfg. Co.	1965		32	208	11
	25-34-583	:1			363	200	**
	25-34-583	Kentile, Inc.			461	310	17
	25-34-583	11			174	320	11
	25-34-591	Cornell-Dubilier Elec.Co.	•		324	220	*1
	25-34-591		1966	50	250	25	11
		Kentile, Inc.					0
	25-34-611	Middlesex Water Co.	1963	81	101	1600	Csd
	25-34-613		1963	-	110	1420	
	25-34-628	Plainfield Country Club	1957	113	600	412	Trb
	25-34-631	P. Amarci			270	100	! 1
	25-34-6-37	Middlesex Water Co.			402	852	11
1	25-34-637	11			454	320	11 5
	25-34-637	11	1955	40	532	350	11
	25-34-638	11	1956	_	540	465	*1
	25-34-638	ju –	1956	50	629	500	17
	25-34-638	11	1956	-33	700	210	11
		Industrial Disertes Co	1900				11
	25-34-638	Industrial Plastics Co.			450	400	*1
	25-34-662	Middlesex Water Co.			507	614	**
	25-34-662	•			508	795	11
	25-34-671	Standard Plastics Prod.Co.	.1963	70	200	100_	
	25-34-676	Dreyfus Co.		••	750	350	ii .
	25-34-734	Chemsol, Inc.	1963	50	305	190	11
	25-34-738	Parkway Plastics, Inc.	1960	22	340	150	9.7
	25-34-816	Ice Palace, Inc.		41	310	75	11
		Kentile Inc.		-⊤ -	250	250	11
			. 1001	20			••
	25-34-861	Tingley Rubber Co.	1961	. 32	428	266	;;
	25-34-915	Middlesex Water Co.	1963	78	406	450	••
	25-34-925	American Can Co.	1953	25ก	250	89	
7	<u> 1</u> 25-34-938	Metuchen Country Club	1964	54	390	750	**

25-34-946 - 25-34-948	Edison Asphalt Co.			485 301	54 40	Trb
25-34-974 The 34 979	Twp. of Raritan			445 457	25	11
D 25-34-978			•	437	488	
25-35-124	Shackamaxon Country Club	1955	22	301	250	11
25-35-133	Cocanougher			89	80	17
25-35-164	City of Rahway			72	4	Q
₹25-35-729	St. Nicholas Church	1972	63	220	100	Trb
125-35-755	Middlesem Water Co.	•		610	160	11
25-35-763	***	•		507	30	11
△25-35-765	Roosevelt Eospital	1954	33	394	115	11
△25-35-774	National Grocery Co.	1956	45	231	300	11 .
À 25-35-775	Costa Ice Cream Plant			275	125	11
△ 25-35-775	11			275	125	**

J. Geodetic Control Survey monuments described Index Map 30; adjacent Index Map 25

I. Water Well Records

			Screen		•	
	i .		Setting			
		Year	or Depth	Total	g/m	
Location	Owner	Drilled	of Casing	Depth	<u>Yield</u>	Formation
25-44-237	Ford Motor_Co.			500	96	Trb
25-44-25 3	Middlesex Water Co.	1966	38	566	150	17
25-44-259				500	115	11
25-44-263	11			476	187	**
25-44-265	• "		•	501	140	"
	Ford Motor Co.			515	- 60	
25-44-285	Twp. of Raritan			452	263	ri
25-44-286				363	35	"
25-44-295	11 ¹			382	275	"
$\Delta^{25-44-312}$	American Cholesterol Co.	1955	37	525	155	**
△25-44-316	John F. Kennedy Hospital	1972	62	140	75	11
25-44-318	Revlon Co.			611	120	11
△25-44-321	11			611	205	**
人25-44-321	"			510	205	**
△25-44-322	Holophane Co.	1961	41	256	100	**
775-44-342	Twp. of Raritan			307	300	10
T 25-44-344	" "			562	75	*1
25-44-368	11			457	12	11
25-44-376	11			520	20	- 11
25-44-422	Johnson & Johnson	1962	39.	250	163	11
25-44-434	Thode's Inc.			509	85	11
25-44-445	DuPont deNemours & Co.			506	70	11
25-44-445	11			550	125	**
25-44-446	Richardson Co.			450	100	**
25-44-446	Triangle Conduit & Cable Co.			396	100	**
25-44-446	Rhodia, Inc.	1962	63	400	115	TT .
25-44-451	Monte Carlo Wine Ind.			332	80	**
25-44-482	Gulbenkian Seamless Rug Co.			650	70	**
25-44-651	Herbert Sand Co.			72	_	Q
25-44-651	11			72	_	ñ
T25-44-654	tt .			75	_	**
05.				,,		
À 25−45−117	Paraffine Co., Inc.			402	100	Kmr
△25-45-118	11			417	165	11
△25-45-129	Aluminum Co. of America	1959	_	27	108	Trb
25-45-132	Richmond Radiator Co., Inc.	-,-,	-	352	15	Kmr
25-45-171	Raritan Arsenal			375	27	11
				J. J	- 1	

Screen

J. Geodetic Control Survey monuments described Index Maps 30,34,35

BLOCK #26-31

- A. Arthur Kill, Elizabeth, Perth Amboy, Roselle
- B. Arthur Kill-Morses Creek, Rahway, Woodbridge River; Raritan-Lower Raritan
- C. 1. Rahway Recording and non-recording precipitation gauges
 - 2. Map No. Location Period of Record
 75 Rahway River at Rahway
 77 Robinsons Branch Rahway River at Rahway
 1908-1915, 1921-
 - 3. 75 Rahway River at Rahway 1939-77 Robinsons Branch Rahway River at Rahway 1964-273 Rahway River at Rahway, Woodbridge-Hazelhurst Ave. 1964-

Water Quality Standards: (explained in Atlas Sheet description) FW2, TW2 except where classified FW3 or TW3

- D. Wisconsin Terminal Moraine (Qtm), Magothy and Raritan Formations (Kmr), Brunswick Formation (Trb)
- E. 1. Physiographic Province: Piedmont
 Subdivision: Triassic Lowlands
 Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone
 Plain
 Elevations (ft.above sea level): hills 150, valleys 0
 Relief (ft.): 150

Physiographic Province: Coastal Plain Subdivision: Inner Plain Major Topographic Features: Arthur Kill, Clay and Marl Region Elevations (ft.above sea level): hills 200, valleys 0 Relief (ft.): 200

- 2. a. Normal Year: 46"

 Dry Year: 38"

 Wet Year: 52"
 - b. January: 32°F July: 74°F
 - c. 242 days. Last killing frost: 4/20; first killing frost: 10/20
- F. Middlesex County:

 Merrill Park

 Roosevelt Park

 Union County:

Rahway River Parkway Middlesex Water Company:

Private Watershed

I. Water Well Records

			Setting			
	į	Year	or Depth	Total	g/m	
Location	Owner	Drilled	of Casing	Depth	Yield	Formation
26-31-132	Hyatt Roller Bearing Div.			501	500	Trb
26-31-237	Tingley-Reliance Rubber Co.			122	120	11
26-31-239	Hatfield Wire & Cable Co.	1959	52	350	323	11
26-31-243	Rahway, City of	1953	21.75	57	355	Q .
26-31-266	Quinn & Boden	1966	35	35	- 23	Trb
26-31-268	n i	•		357	150	11
26-31-274	Rahway, City of			301	12	11
26-31-294	Rahway Theater			349	100	11
26-31-315	Linden Ice Co.	1959	40	550	70	11
26-31-317	General Gum Products	1953	39 ' 9''	316	100	11
26-31-338	Winews, C.H. & John			200	750	11
26-31-342	Layne, New York Co.	1955	36	310	30	11
26-31-364	Lampert Dairy Farms Inc.	1967	39	290	17	11
26-31-465	Middlesex Water Co.	1964	32 ' 8"	505	495	**
26-31-533	Maclac Co.			151	91	11
26-31-576	Costa's Ice Cream Co.	1961	40	359	300	*1
26-31-594	Security Steel Equip. Inc.	1957	26	614	34 -	11
△ 26-31-861	Sabol National Grocery	1956	24	200	70	*1
₹26-31-891	Swift & Co.	1955	43'8"	61	70	Kmr
	California Refining Co.			288	92	11
26-31-938	Second Reverse Terminal Inc.	1958	109'6"	168	150	Q
						•

Screen

J. Geodetic Control Survey monuments described Index Maps 30,31; adjacent Index Maps 25,26

BLOCK #26-41 8/79

- A. Arthur Kill, Keyport, Perth Amboy, South Amboy
- B. Arthur Kill-Woodbridge River; Atlantic Coastal-Matawan; Raritan-Lower Raritan
- C. 2. Map No. Location
 111 Raritan River at Perth Amboy

Period of Record 1966-

3. 111 Raritan River at Perth Amboy

1964-

Water Quality Standards: (explained in Atlas Sheet description) FW3, TW1 except where classified TW2 or TW3

- D. Wisconsin Terminal Moraine (Otm), Magothy and Raritan Formation (Kmr)
- E. 1. Physiographid Province: Coastal Plain

Subdivision: Inner Plain

Major Topographic Features: Clay and Marl Region, Wisconsin Terminal

Moraine, Arthur Kill, Raritan Estuary

Elevations (ft.above sea level): hills 150, valleys 0

Relief (ft.): 150

2. a. Normal Year: 44"

Dry Year: 36"

Wet Year: | 49"

b. January: 32°F

July: 74°F

- c. 242 days. Last killing frost: 4/20; first killing frost: 10/20
- H. Westminster House, Perth Amboy (State Owned)
 Proprietary House, Perth Amboy
- I. Water Well Records

	}		Screen Setting	,		
		Year	or Depth	Total	g/m	
Location	Owner	Drilled	of Casing	Depth	<u>Yield</u>	Formation
△26-41-133	N.J. Highway Authority	1965	122	140	108	Kmr
$\triangle 26-41-157$	Heyden Chemical Co.			50	87	11
\triangle 26-41-168	Carborundum Co.			80	166	11
\triangle 26-41-191	General Ceramic Co.			75	130	11
入26-41-234	Witco Chemical Co.	1965	100	120	200	11 1
△26-41-247	National Corp.			67	180	**
∠ 26-41-348	Standard Underground Cable	1924	85/123	171	458	**
△26-41-372	Roessler & Hasslacher	1926	124	164	3 83	**
26-41-436	Thomas Industries			265	0	Trb
À26-41-469	Titanium Pigment Co.			257	265	Kmr
△26-41-528	Jersey Central Power & Light	1943	161	?	205	?
△26-41-529		1972	138	232	305	?
△26-41-541	Titanium Pigment Co.			279	830	Kmr
	National Lead Co.			275	400	ti
26-41-551 26-41-578	City of South Amboy			323	150	11
△26-41-594		1967	38.5	49	425	11
26-41-599	State Farm Insurance	270.	30.3	426	62	n

J. Geodetic Control Survey monuments described Index Maps 31,35

8/76

- A. Freehold, Keyport, Marlboro, South Amboy
- B. Atlantic Coastal-Navesink, Matawan; Raritan-Lower Raritan, South River
- C. 2. Map No. Location Period of Record
 109 Deep Run near Browntown 1933-1940
 110 Tennent Brook near Browntown 1933-1941

Water Quality Standards: (explained in Atlas Sheet description) FW2. TW1 except where classified FW3

- D. Red Bank and Tinton Sands (Krb), Navesink Marl (Kns), Mount Laurel and Wenonah Sands (Kmw), Marshalltown Formation (KMt), Englishtown Sand (Ket), Woodbury Clay (Kwb), Merchantville Clay (Kmv), Magothy and Raritan Formation (Kmr)
- E. 1. Physiographic Province: Coastal Plain
 Subdivision: Inner Plain
 Major Topographic Features: Cheesequake Creek Marsh, Clay and Marl Region
 Elevations (ft.above sea level): hills 200, valleys 0
 Relief (ft.): 200
 - 2. a. Normal Year: 45"
 Dry Year: 35"
 Wet Year: 48"
 - b. January: 32°F
 July: 74°F
 - c. 241 days. Last killing frost: 4/20; first killing frost: 10/20
- F. Div. of Parks and Forestry: Cheesequake State Park Perth Amboy Waterworks: Municipal Watershed

I. Water Well Records

	· •	Setting						
		Year	or Depth	Total	g/m			
Location	Owner	Drilled	of Casing	Depth	Yield	Formation		
△29-01-131	E.I.duPont deNemours & Co.	1966	281/286	287	90	Kmr		
29-01-137)	1955	74/79	81	100	n		
29-01-155	vi	1954	97/117	113	450	11		
29-01-178	C.P.S. Chemical Co.	1972	64/75	75	132	**		
29-01-185	Manzo Const. Co.	1965	94/114	114	65	11		
7 29-01-212	N.J. Hwy. Auth.	1954	92/122	308	199	11		
29-01-212	11	1954	91/112	243	199	11 -		
29-01-229	Sayreville Boro	1967	254/288	288	1218	11		
29-01-234		1966	238/248	248	100	f1		
29-01-241	Hope Park Homes, Inc.	1956	167/177	181	120	11		
29-01-245	T.S. Evans Const. Co.	1962	180/195	195	130	r1		
29-01-277	Vincent Nivickas	1969	213/228	228	100	11		
29-01-278	Midtown Water Co.	1956	266/306	311	1227	11		
29-01-296	N.J.Dept. of Cons.	1957	299/320	322	360	tt		
29-01-356	Lawrence Harbor Water Co.	1954	360/395	400	703	et .		
29-01-398	Matawan Twp.	1958	447/487	487	700 -	.11		
29-01-398	11	1965	422/457	457	1007	11		
29-01-441	Madison Twp.Mun.Util.Auth.	1972	250/292	293	363	. II		
29-01-537	Westbury Water Co.	1956	246/265	265	115	**		
29-01-552	Gulf Oil Co.	1958	103/113	113	65	11		
29-01-595	Madison Twp.Bd.of Ed.	1971	173/193	195	151	tt		
29-01-629	Matawan Boro	1967	213/267	267	703	TT ·		
29-01-661		1956	213/267	271	726	17		
29-01-713	Madison Twp.Mun.Util.Auth.	1972	321/363	363	285	**		
29-01-731	l ît	1966	425/475	475	1000	11		
29-01-731	11	1966	435/480	480	1000	**		
29-01-732	Madison Twp.Bd.of Ed.	1963	184/204	205	300	† 1		
29-01-732	Browntown Water Co.	1959	178/249	248	750	11		
29-01-732	11	1961	188/250	250	750	11		

Screen

J. Geodetic Control Survey monuments described Index Maps 35,38,39

SUBJECT TO REVISION

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 403038 LONGITUDE 741918

DRAFT

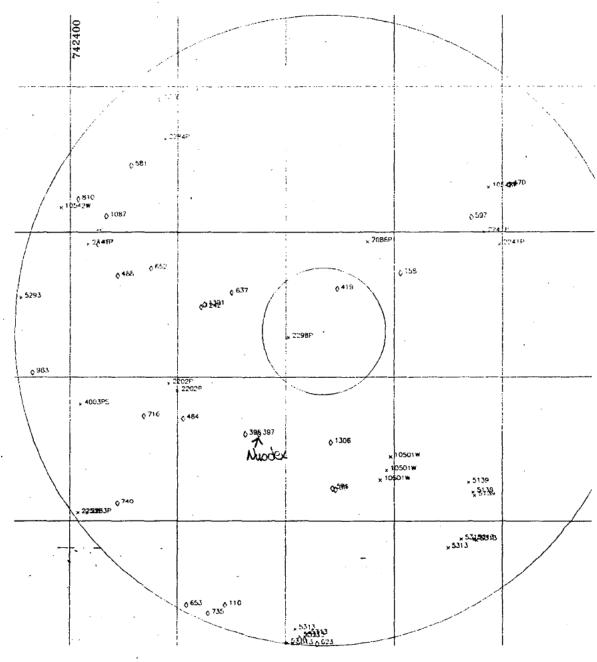
SCALE: 1:63,360

" WATER WITHDRAWAL POINTS
O NIGS CASE INDEX DITES
I MRE AND 5 MILE FRADE INDECATED

NUGS CASE INDEX DATA RETRIEVED FROM: NEW JERSEY GEOLOGICAL SURVEY ON 12/22/87

PLOT PRODUCED BY:
NJDFP
DMSION OF WATER RESOURCES
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625
DATE: 01/24/89

SUBJECT TO REVISION



en bodere	19 M A A E [507 F5.5- (1)	LAR. II.	1,60	d LL.MOC	DISTANCE	OUNTY	e.N	режты	6601.	GE02	CAMPACITY
14754000	WHERICAN METAL MUNICIPAL CO.	25.54 PKD	3	non responsiv	(A)	4.7	2:35	05	900	GTRB		200
	一位 联环联系统 化联合键 网络建筑体统 的复数	And the state of t	•	Поптеоропон		4.7	7.3	$f_{ij}^{*}f_{ij}^{*}f_{ij}^{*}$	550 M 3	(5119)3		400
१०१५४४% व	快速使打工机) 医线性烙管症 高顶端产制医	979 A (2009)	2		LJ.	35.25	7.5	29	60	(96)4		150
20995	TELLED (2.19.)上京 总标道 M CEATABLE	chrodia in a ses	1	r		1.6	39	02	505	GTRB		500
23000	同用证法。高州·拉尔约翰	AND TO KEEPING	<u> </u>			2-6	2.3	0.65	100	G FED		683
	HUBLES AMERICA	45000054	2			2.6	23	C/5	2000	GTEE		85
	e# \$45.50 字# \$46.45 \$4	150 x 1215%	.3			2.5	23	05	100	0.038		112
234164	CHECASON (SOC. INC.	$\mathcal{M}_{\mathcal{A}}(\{\varphi_{1},Y_{1}Y_{2}^{*}\},\{\varphi_{2}^{*}\})$	1 .			3.2	23	16	94	€¥:EE		240
	CHEMICAN LEVY. HALL.	45001865	2 .			3.0	22.5	16	106	GKRF		180
222527	MARKET STAR COTAC.	230400°	I INFIL GA	•	fr.	4.9	23	04	18	GURE		210
	PARCHER LANGE CO The	4(3(3)) (129	2 INFIL 6A			4.8	23	04	14	OKRE		4(4)
3.569.00	SEPTIMENT WILL A COUNTRY TILE.	2512005	WELL NO. 1	7		4.0	73	05	390	GIES		400
State of the state of	BOTH LOWER LEADING CLUB	26041099	22			0.6	39	20	80	G158		400
23411-	7岁得到我们,1995年。	(20) - (10) (10)	- 1	-		4.1	25	05	525	GTRB		150
4000313	ELECTRIC SUBSTITUTE SUBSTITUTE & GAS	SILVER LAKE		non rooponoi	vo i	4.1	2.5	C5	6	SH		2229
\$54 mos	RONARA VERSON ERANDEA DEBAL	2604078	101	non responsi	ve :	3.5	225	19	48	GEO-OB		400
	AUTHOR OTHER DEPT.	24/04/81/2	90		1.1	5.4	223	19	593	GUECIE		450
,	SOUTH PARCY MAYER DEFT.	4600144	8		Ü	3.6	Michael Migrap Alle M	19	237	CFORE		1000
5/3/5/3	MADDICECTEX INFATER COMPANY	2513518	THERMAL		5.3	4.9	23	Özés	566	GIEB	,	200
5340 -	SWEET FILE BONDING	2887877872	MORGON P			4.2	233	19	288	CASE		1200
	SOVERVILLE OFFICIAL	229000043	0-49.73			4-1	23	19	248	GKRE		3 00
	SAYPEUT F BURNING	291030	R			4.0	73	19	116	GURUB		400
	SMAREALI (F. 14)FOREH	2910499	15	2		4.0	23	19	291	GRINE		1230
	BANALIE AT L'EL EX MELLENA	2911861	Т	A		4.0	25 C 4	19	141	GARDB		400
	SAYREVILLE (#40)#44	2590 512.1.4	0			5.0	223	1.0	25	SM3008		3330
	SWAREALLE POLICIÉM	(250) (25) may	E.	,		5.0	23	19	62	64G-08		
	SAMERALTE FORMALISM	290395C	G			4,9	23	19	87 87			525(0) ·
	SECURENCE OF PARKET	2803854	H			4.9	23	19	83	GKAOB GKAOB		350
	SAMPLE ENDROCHE	3413993	4			4.8	23	19	850 6969	GMADE GMADE		350
	写的研究是让是一个 医化乳样	247451	i			- 4.9	23	19	93			7(X)
	•		7.			7	~ .	17	3.2	G4508		300

Geology Legend:

GTRB= Brunswick Formation

GKM = Magolly

GKRF = Farrington Sand

SR = Raritan River Basin-Unknown

GKROB = Old Bridge

NUODEX INC.
FORDS, NEW JERSEY

GENERAL INFORMATION & SITE EVALUATION SUBMISSIONS FOR THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APRIL 25, 1985

VOLUME 1 MAIN SUBMISSION



165 Fieldcrest Ave. • CN 7809 • Edison, New Jersey 08818-7809 • (201) 225-2000

A



PRINCETON AQUA SCIENCE

165 Fieldcrest Avenue • CN 7809 • Edison, New Jersey 08818-7809 • Telephone (201) 225-2000

April 25, 1985

Anthony McMahon
Bureau of Industrial Site
Evaluation
Division of Waste Management
New Jersey Department of
Environmental Protection
CN-028
Trenton, NJ 08625

Dear Mr. McMahon:

On behalf of Nuodex Inc. we are transmitting three (3) copies of the "General Information and Site Evaluation Submissions" for compliance with the Environmental Clean-up Responsibility Act (ECRA) pertaining to the Nuodex, Fords facility.

Please feel free to contact me with any questions or comments you may have regarding this matter.

Very truly yours,

PRINCETON AQUA SCIENCE

Warren D. Libutti Project Manager

WDL:JW:am #8410-035

Encl.

cc: Mario Ceprini

 A^2

NUODEX INC.

Fords, New Jersey

Table of Contents

			-
		Page	<u>Volume</u>
Part I Part II	General Information Submission Site Evaluation Submission	1 11	1 1
	Attachments		
A	Process Operations	A-1	1
В	Storage Facilities Containing		
_	Hazardous Materials	B-1	1
C	Sampling and Analysis Plan	C-1	1
.D	Equipment and Materials Removed	D 1	1
	from Facility	D-1	1
E	Historic Analytical Results Surface Water Discharge		2
	Groundwater Quality	•	3
	Landfill/Sludge Lagoon		4
	Off Site Contamination		4
F	Spill Prevention Control and		
	Countermeasure Plan	F-1	5
G	Listing and Discription of Spills	G-1	5
	•		
	Maps		
1.	Hazardous Waste/Substance Areas	Map-1	
.2.	General Site and Spill Location Map	Map-2	
3.	Sampling Location Map	Map-3	
4.	Detail Site Plan of Building Area	Map-4	(End of Document)



STATE OF NEW JERSEY EPARTMENT OF ENVIRONMENTAL PROT DIVISION OF WASTE MANAGEMENT HAZARDOUS SITE MITIGATION ADMINISTRATION BUREAU OF INDUSTRIAL SITE EVALUATION



ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT INITIAL NOTICE GENERAL INFORMATION SUBMISSION

(This is the first part of a two-part application form. This information must be submitted within 5 days following public release of a decision to close operations or the signing of a sales agreement or option to purchase involving an Industrial Establishment as defined in N.J.S.A. 13:1K-6, the Environmental Cleanup Responsibility Act.)

Please refer to N.J.A.C. 7:1-3.7 et seq. before filling out this form. Answer all questions. Please print or type.

		Date April 25, 1985
A,	Industrial Establishment	
	Name Fords Plant of Nuodex Inc.	Telephone No. (201) 738-4882
,	Street Address Industrial Avenue	
	City or Town Fords	State NJ Zip Code 08863
	Municipality Woodbridge Township	County Middlesex
в.	Block 93, Lot 100; Block 63, Lot 3; B1	ock 63, Lot 2
ε.	Standard Industrial Classification (S	IC) Number 2869
D.	*Current Owner	
	Name Nuodex Inc.	Telephone No. (201) 981-5000
	Street Address Box 365 Turner Place	
	Municipality Piscataway	State NJ Zip Code 08854
ε.	If the industrial establishment disch plant, provide the name and address o	
	Name Middlesex County Utilities Author	Telephone No. (201) 721-3800
	Street Address None	<u> </u>
	Municipality Sayreville	State NJ Zip Code 08872
	•	FOR DEP use only Date Received

1

INITIAL NOTICE-GENERAL INFORMATION SUBMISSION (page 2 of 6)

Final Disposition	?	
G. How is this Indust	trial Establishment heated?(gas,oil,	electricity)
Previous owner(s) and (current address (es)(attach addition	nal sheets if necessary)
Name	Current Address	Description of the Operation
Tenneco Chemicals, I	nc. Park 80 Plaza West - One	Chemicals Manufactu
	Saddle Brook, NJ 07662	
Heyden - Newport Inc	. No longer in existence	Chemicals Manufactu
•		
Norvel Chemical	No longer in existence	<u> </u>
	tisting an ECRA review is the closur of the decision to close the facil:	
Date of the public rele	esse of the decision	
Is the public release of	ericlosed?Yes _X No	
If you checked "no", st	tate the reason(s) There was no	oublic release of the

*The action that triggered ECRA's review was the closure of the formaldehyde facility located at the industrial establishment. This facility was closed on February 25, 1985. Notification of such closure was sent to Nuodex's customers of formaldehyde.

ECRA 1 5/84

INITIAL NOTICE-GENERAL INFORMATION SUBMISSION (page 3 of 6)

Name and address	o or the dense par				
Name			idress and ipality	•	Phone No.
				·	
					
·		·····		 .	·
Is a copy of th	e agreement of sal	e or option (to purchase att	eched?	Yes
• •	e agreement of sal			_	Yes
If you checked	•	ason(s)			
If you checked Actual date pro	"no", state the re	ason(s) of operation	s or transfer o		
If you checked Actual date pro	"no", state the re posed for closure t designated to wo Paul T. O'Brien	ason(s) of operation	s or transfer of Department. Steve J. Pi	of title_	
If you checked Actual date pro Authorized agen	posed for closure t designated to wo Paul T. O'Brien Turner Place P. O. Box 365	ason(s) of operation rk with the N	Steve J. Pi Greenstone 226 West St	cco, Sokol ate Stree	
If you checked Actual date pro Authorized agen Name	"no", state the re posed for closure t designated to wo Paul T. O'Brien Turner Place P. O. Box 365 Piscataway, NJ	ason(s) of operation rk with the N	Steve J. Pi	cco, & Sokol ate Stree	
If you checked Actual date pro Authorized agen Name Street Address	"no", state the re posed for closure t designated to wo Paul T. O'Brien Turner Place P. O. Box 365 Piscataway, NJ 08854	ason(s)of operation: rk with the N	Steve J. Pi Greenstone 226 West St Trenton, NJ	cco, & Sokol ate Stree 08608	

INITIAL NOTICE-GENERAL INFORMATION SUBMISSION (page 4 of 6)

Permit Number	Date of Approval of Denial	Reason for Denial (if applicable)	Expiration Date
See Attach	ned List		
B. New Jersey	Pollutant Discharge Eliminat	ion System	
Number 0000116	Discharge Date i Activity or De NPDES-9/23	ssued Expiration	
J 0000116	Ground Water 7/15/84	7/14/89	Raritan Riv
•			
C. United State	tes Environmental Protection	Agency(EPA) Identificatio	
C. United State	tes Environmental Protection	Agency(EPA) Identificatio	
N.J. D (D. All other gency Issuing	tes Environmental Protection 002184562 Federal, state, local environ Permit Number	Agency(EPA) Identification mental permits. Date of Approval	n Number. Expiration
N.J. D (N.J. D (D. All other gency Issuing Permit DEP (Water Diver	tes Environmental Protection 002184562 Federal, state, local environ Permit Number	Agency(EPA) Identification mental permits. Date of Approval or Denial	Expiration Date
N.J. D (N.J. D (D. All other gency Issuing Permit DEP (Water Diver	federal, state, local environ Permit Number rsion) 402 - IPS Wells) 26-5393 to 26-5406	Agency(EPA) Identification mental permits. Date of Approval or Denial 9/14/83	Expiration Date 5/31/98
N.J. D (N.J. D (D. All other gency Issuing Permit DEP (Water Diver DEP (Monitoring DEP (Monitoring	federal, state, local environ Permit Number rsion) 402 - IPS Wells) 26-5393 to 26-5406	Agency(EPA) Identification mental permits. Date of Approval or Denial 9/14/83 2/8/82	Expiration Date 5/31/98 N/A
N.J. D (N.J. D (N.J. D (D. All other gency Issuing Permit DEP (Water Diver DEP (Monitoring DEP (Monitoring	resion) 402 - IPS Wells) 26-5393 to 26-5406 Wells) 26 - 5573	Agency(EPA) Identification mental permits. Date of Approval	Expiration Date 5/31/98 N/A

INITIAL NOTICE-GENERAL INFORMATION SUBMISSION (page 5 of 6)

_	Check here is no enforcement actions involved
•	Date of Action August 16, 1984
	Section of Law or Statute violated N.J.A.C7:26-7.4(a) 4iii; 4iv; 4vii
	Type of Enforcement Action ADMINISTRATIVE ORDER
	Description of the violation Failure to provide haulers name, address, phone no
	on manifest form; failure to provide hauler EPA I.D. No. and name, type and
	quantity of hazardous waste being shipped.
	How was the violation resolved?
-	Corrected manifest submitted on August 24, 1984 by John Mahon (plant Mgr).
•	Date of Action September 24, 1984
	Section of Law or Statute violated N.J.A.C7:26-9.4(d) 41v and 4v
	Type of Enforcement Action NOTICE OF VIOLATION
	Description of the violation No segregation between hazardous and non-hazardous
	wastes; no labelling on hazardous waste drums.
	How was the violation resolved? Wastes were segregated into separate areas and
	properly labelled. This was followed by a letter to NJDEP by John Mahon

ECRA 1 5/84

(Add additional pages, if necessary)

INITIAL NOTICE-GENERAL INFORMATION SUBMISSION (page 6 of 6)

Send this completed form to:

N.J. Department of Environmental Protection
Division of Waste Management
Bureau of Industrial Site Evaluation
EN D28
Trenton, New Jersey 08625

Attn: ECRA Initial Notice

AIR POLLUTION PERMITS

Permit No	o	Date of Approval	Expiration Date
.00518	Dowtherm Stg. Tank	2/20/80	2/20/90
000519	Zinc Vent Stack	2/20/80	2/20/90
00520	Dowtherm Vac. Pump Exhaust	2/20/80	2/20/90
^01442	42,000 Gal. Stg. Tank Maleic Acid	2/20/80	2/20/90
001901	Toluene Storage Tank	4/16/80	4/16/85
03151 *	12,000 Gal. Stg. Tank Butoxy Ethanol	3/3/81	3/3/86
03155*	Vacuum Jet System Tributoxyethyl Phosphate	3/3/81	3/3/86
·03156*	No. 1 Reactor Vac. Jet	3/3/76	3/3/86
005411	Acrylic Polym r Bagger	6/6/77	6/6/87
J054 <u>12</u>	Acrylic Polymer Air Conveyor	6/6/77	6/6/87
105413	Methyl Methacrylate Stg. Tk.	6/6/77	6/6/87
205414	Spray Dryer	6/6/77	6/6/87
005415	Caustic Scrubber	6/6/77	6/6/87
)07304**	No. 3 React r - Vac. Jet	2/7/78	2/7/88
007305*	8,000 Gal. Stg. Tank T-BEP	1/22/78	1/22/88
D08778*	10,000 Gal. Phosphorous Oxychloride	10/11/78	10/11/88
012652	Formox Tankage	1/7/81	1/7/86
012653	Formaldehyde Absorber	1/7/81	1/7/86
019099*	12,000 Vertical Stg. Tank Phenol	6/19/80	6/19/85
022614	O/C Toluene Stg. Tank	11/9/76	11/9/86
025195	Gasoline Storage Tank	11/22/76	11/26/86
029692	10,000 Gal. Stg. Tk. MeOH	9/30/77	9/30/87
029693	10,000 Gal. Methanol	9/30/77	9/30/87
*Turned o	ver to Borg-Warmer - April 1983	7	A

Permit No.		Date of Approval	Expiration Date
029694	10,000 Gal. Methanol	9/30/77	9/30/87
J29695	10,000 Gal. Methanol	9/30/77	9/30/87
029697	150,000 Gal. O/C Toluene	9/30/77	9/30/87
029698	150,000 P/C Toluene	9/30/77	9/30/87
029705*	12,000 2-EH	9/30/77	9/30/87
029706*	12,000 M/C Toluene	9/30/77	9/30/87
029708	100,000 Gal. Xylene	9/30/77	9/30/87
033101	600,000 Gal. Methanol	3/29/78	3/29/88
034372*	12,000 Gal. Isodecyl Alcohol	8/19/77	8/19/87
034373*	10,000 Gal. T-BEP	8/19/77	8/19/87
034374*	10,000 Gal. Glass Lined T-BEP/V-142	8/19/77	8/19/87
034375*	19,000 Gal. SS TOF	8/19/77	8/19/87
034376*	12,000 Gal. SS T-BEP/V142	8/19/77	8/19/87
037820*	100,000 Gal. SS T-BEP/V-142	4/1/78	4/1/83 Renewal Pending
037821*	50,000 Gal. SS T-BEP/V-142	4/1/78	4/1/88
045583	Nuosept 95 Reactor	3/28/80	5/20/87
045665	Nuosept 95 Drumming Station	3/28/80	5/22/87
046049	250,000 Gal. Benzene Stg. Tk.	3/3/79	3/3/86
046050	8,600 Gal. Benzene Stg. Tk.	2/11/81	3/3/86
046908	Hexa Centrigue Stack	12/1/81	2/12/85
048306	500 Gal. Mix Tank (Benzoic Acid)	12/12/80	12/12/85
048307	10,000 Gal. Benzoic Acid Stg. Tk	12/12/80	12/12/85
060491	Blower Vent, Benzoic Acid Mix Tk.	5/20/82	11/4/84
052205	10,000 Methanol Stg. Tk.	5/10/82	5/10/87
052206	10,000 Methanol Stg. Tk.	5/10/82	5/10/87
052207	10,000 Methanol Stg. Tk.	5/10/82	5/10/87
060491	Blower Vent, Benzoic Acid Mix Tk.	5/20/82	11/4/84
063826	10,000 Horizontal Underground Tank #6=i	J 2/25/83	2/25/88

8



Turner Place, P.O. Box 365 Piscataway, New Jersey 06854 (201) 981-5049 RECEIVED

M. Q. CEPRINI

PAUL T. O'BRIEN General Counsel and Secretary

March 22, 1985

Hazardous Site Hitiyation Administration Division of Waste Management Department of Environmental Protection State of New Jersey CN U28 Trenton, New Jersey U8625

Attention: Mr. K. J. Katz

RE: Nuodex Inc. - Fords Plant Industrial Avenue

woodbridgeTwp./Fords. Hiddlesex County

ECRA Case No. 85161

Dear Sir:

I have received A. McManon's letter to me dated Harch 19, 1985 with respect to the above-captioned matter. Among other things, the letter indicated that our Initial Notice which was submitted on the subject industrial establishment was incomplete as detailed on the checklist which was included with the letter. In that regard, the following is the information required to complete the Initial Notice:

- 1. With reference to Item 1G of the Initial Hotice, the Industrial Establishment is heated with oil.
- 2. With respect to Item 3 of the Initial Notice, you will find enclosed a copy of the notice to formaldehyde customers dated January 11, 1985 which was provided to our major formaldehyde customers by mail on January 11, 1985.

Hazardous Site Mitigation Administration Page 2 March 22, 1985

3. With respect to Item No. 5, the formaldehyde operations located at the industrial establishment were terminated on February 25, 1985. Small Nuosept®95 Preservative operation and Guaiacol "C" Anti-Skin Agent operation were transferred to Nuodex's Elizabeth, New Jersey facility as of the same date.

At the present time, the only operations conducted at the industrial establishment are a boiler plant and a neutralization system which neutralizes effluent prior to discharge to the Middlesex County Utilities Authority sewer.

As requested in Mr. McMahon's letter, we will be providing to you a Site Evaluation Submission for the site as soon as possible.

Very truly yours,

PUB: Jhc

cc: S. J. Picco, Esq.

bcc: J. Fath (w/enclosure)

J. R. Hodgson





DIVISION OF WASTE MANAGEMENT HAZARDOUS SITE MITIGATION ADMINISTRATION BUREAU OF INDUSTRIAL SITE EVALUATION



ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APPLICATION FOR ECRA REVIEW

SITE EVALUATION SUBMISSION

This is the second part of a two part application submittal and must be submitted within 30 days following public release of the decision to close operations or execution of an agreement of sale or option to purchase.

NAME OF APPLICANT	Nuodex Inc.		
	Industrial Avenue		
CITY OR TOWN		ZIP CODE	08863
MUNICIPALITY			Middlesex
	SUBMIT THE FOLLOWING		
have been or	map identifying all areas where currently are generated, manuf ed, handled or disposed, above or	actured, refin	ed, transpor
IS THIS MAP E	NCLOSED? X YES, (See Map #1)	No	
industrial e designed to	description of the current of stablishment organized in the guide the Department step-by-ste lar emphasis on areas of the s	form of a rep through a p	arrative re lant evaluat
industrial e designed to with particul substances as treated, stor note that est but are subje	stablishment organized in the	form of a rep through a perocess stream actured, refin above or belowion prior to De	lant evaluat where hazar ed, transpor ground. Pl
industrial edesigned to with particular substances as treated, stor note that est but are subjective details	stablishment organized in the guide the Department step-by-stellar emphasis on areas of the guide wastes are generated, manufact, handled or disposed on site, ablishments which ceased product; ect to ECRA because of on-going	form of a rep through a perocess stream actured, refin above or below ion prior to Destorage beyond	lant evaluat where hazar ed, transpor ground. Pl
industrial edesigned to with particular substances as treated, stor note that est but are subjective details. This REPOR	stablishment organized in the guide the Department step-by-stellar emphasis on areas of the guide wastes are generated, manufied, handled or disposed on site, ablishments which ceased product to ECRA because of on-going ls on past operations.	form of a representation o	larrative relaritation lant evaluat where hazared, transpor ground. Placember 31, 1 that date,
industrial edesigned to with particular substances as treated, stor note that est but are subjective details. This REPOR	stablishment organized in the guide the Department step-by-stellar emphasis on areas of the guide wastes are generated, manufact, handled or disposed on site, ablishments which ceased producted to ECRA because of on-going ls on past operations. TENCLOSED?YES, (See Attach	form of a representation o	larrative relaritation lant evaluat where hazared, transpor ground. Placember 31, 1 that date,
industrial edesigned to with particular substances as treated, stor note that est but are subjective details. This REPOR	stablishment organized in the guide the Department step-by-stellar emphasis on areas of the guide wastes are generated, manufact, handled or disposed on site, ablishments which ceased producted to ECRA because of on-going ls on past operations. TENCLOSED?YES, (See Attach	form of a representation o	larrative relaritation lant evaluat where hazared, transpor ground. Placember 31, 1 that date,
industrial edesigned to with particular substances as treated, stor note that est but are subjective details. This REPOR	stablishment organized in the guide the Department step-by-stellar emphasis on areas of the guide wastes are generated, manufact, handled or disposed on site, ablishments which ceased producted to ECRA because of on-going ls on past operations. TENCLOSED?YES, (See Attach	form of a representation o	larrative relaritation lant evaluat where hazared, transpor ground. Placember 31, 1 that date,
industrial edesigned to with particular substances as treated, stor note that est but are subjective details. This REPOR	stablishment organized in the guide the Department step-by-stellar emphasis on areas of the guide wastes are generated, manufact, handled or disposed on site, ablishments which ceased producted to ECRA because of on-going ls on past operations. TENCLOSED?YES, (See Attach	form of a representation o	larrative relaritation lant evaluat where hazared, transpor ground. Placember 31, 1 that date,

11.4.	A description the types, age, construction material, capacity, contents, and locations of storage vessels, surface improundments, landfills, or other types of storage facilities, including drum storage, containing bazardous substances or wastes.
	ARE THESE FACILITIES IDENTIFIED ON YOUR SITE MAP OR DESCRIBED IN A NARRATIVE REPORT? X YES, (See Attachment B) NO
	IF YOU HAVE CHECKED "NO," STATE THE REASON(S):
11.B.	The Department requires that satisfactory leak tests such as the Petrotite (formerly the Kent Moore test) or the Leak Lokator LD-2000 Test or Soil Borings be performed to verify the integrity of all underground tanks and that the results of such tests be submitted to the Department.
	ARE THE RESULTS OF THE LEAK DETECTION TEST OR THE SOIL BORINGS ENCLOSED? YES, (See NO
	IF YOU HAVE CHECKED "NO," STATE THE REASON(S): Nuodex will remove
	underground tanks and excavate contaminated soil as part of the
	cleanup plan if results of integrity testing indicates leakage. Results of precision tests on underground tanks will be forwarded to NJDEP's attention, when available.

12. A complete inventory of hazardous substances and wastes, including description and location of all hazardous substances or wastes generated, manufactured, refined, transported, treated, stored, handled or disposed on site, above and below ground, and a description of the location, types and quantities of hazardous substances and wastes that will remain on site. (Attach additional sheets if necessary.)

MATERIAL	QUANTITY *0	Gals. LOCATION	Storage METHOD .	TO REMAIN ON SITE (YES OF NO)
Caustic Soda	14,300	Dept. F-1	Tanks	No
No. 6 Fuel Oil	10,000	Boiler Room	Tanks	110
Gasoline	340	Gate House	Tank	110

TO REMAIN

Propane	6,900			
	0,500	Dept. F-1	Tank	No
Propane	50	B.R. Lab & V-1	Cylinders	No
Propane	150	Propane Storage Shed	Cylinders	No
F-1 Catalyst	4,000	F-1	Reactor 1 & 2	No
Lab Chemicals	500 lbs.	Control Lab	Miscellaneous	No
		,		
All hazardous m	aterials will	be removed by 8/1	85. Vessels will	he left clean
r discharge of istorical opera ctions undertaker wastes. (Att	hazardous of the steen to bandle ach additions	and location on a substances or was site and a detaile any spill or discal sheets if neces: X YES, (See Markets)	tes that occurred ed description of charge of hazardousary.)	during the any remedial s substances
		ATE THE REASON(S):	-	_
	•			
				

13.

	A detailed sampling or other environmental evaluation measurement plan wincludes proposed soil, groundwater, surface water, surface water sedim and air sampling determined appropriate for the site. (This sampling must be developed in conformance with ECRA Regulations N.J.A.C. 7:1-3.1 seq., and Quality Assurance Guidelines as developed by DEP, copies of ware enclosed.)
•	IS THE SAMPLING PLAN ENCLOSED? YES, (See Attachment C) NO
•	IF YOU HAVE CHECKED "NO," STATE THE REASON(S):
•	
1	A detailed description of the procedures to be used to decontaminate and decommission equipment and buildings involved with the generat manufacture, refining, transportation, treatment, storage, handling disposal of hazardous waste or substances including the name and location the transporter, the ultimate disposal facility, and any other organization involved. IS THE DETAILED DESCRIPTION ENCLOSED? X YES, (See Attachment D)
1	IF YOU HAVE CHECKED "NO," STATE THE REASON(S):
•	
	Copies of all soil, groundwater and surface water sampling results including effluent quality monitoring, conducted at the site of industrial establishment during the history of ownership by the ownerstor, including a detailed description of the location, collect thain of custody, methodology, analyses, laboratory, quality assurately control procedures, and other factors involved in preparation of sampling results;
1	ARE HISTORICAL RESULTS ENCLOSED? X YES, (See Attachment E) No
	IF YOU HAVE CHECKED "NO," STATE THE REASON(S):

17.	If you currently has a Spill Prevention Control Countermeasure Plan (SPCC) for this facility, enclose a copy with this submittal.			
	IS YOUR SPCC PLAN ENCLOSED?	X YES, (See Attachment F) NO, this facility is not required to have an spec plan.		
18.	Please list any other information you are submitting:			
	·			
	••			
	Send complete information pa	ckage to:		

BUREAU OF INDUSTRIAL SITE EVALUATION
DIVISION OF WASTE MANAGEMENT
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN-028

TRENTON, N.J. 08625 ATTN: ECRA NOTICE SUBMISSION ATTACHMENT A

PROCESS OPERATIONS

Extensive descriptions and data have been provided by Nuodex, Inc. pertaining to process activities that took place at the Nuodex Fords facility. The information includes:

Historical Product Listing (A-2 thru A-5)

Products and Raw Materials including quantity used on a yearly basis (A-6 thru A-20)

Process Descriptions and Flow Diagrams (A-21 thru A-61)
Listing of Areas of Hazardous Materials Activity (A-62 thru A-65)

Currently, the plant is not producing any chemicals and is preparing for a shutdown.

All materials, including any hazardous materials, will be shipped off site as part of the current clean-up operation.

The Boiler Room and the sewage plant are currently operating. Nuodex plans to shut these operations down in the near future. A final closing date will be determined after approval of this plan.

From December, 1982 until present, Nuodex Inc. owned and operated the site producing formaldehyde, Nuosept 95, Guaiacol C. tributoxyethyl phosphate, tri-octyl phosphate and diphenyl decyl phosphite. These processes and the processes operated by Tenneco prior to Nuodex are described in the section, "Process Descriptions and Flow Diagrams".

FORDS PRODUCTS

HISTORICAL

•	Location Produced	Dates Produced
Adipic Acid		Before 1966
Aktivins		Before 1964
Amicral		Before 1960
Anisic Acid		Before 1960
Anisoyl Chloride		Before 1960
Benzal Chloride	S-1, S-2	Until 1978
Benzal Chloride, 2,4, 2,6 & 3,4 Dichloro	S-2	Until 1978
Benzaldehyde	12, S-1	1941 - 1969
Benzaldehyde, 2,4, 2,6 & 3,4 Dichloro	S-2, 49	Until 1978
Benzaldehyde, Ortho & Parachloro	S-2, 49	" 1978
Benzil		Before 1960
Benzilic Acid		" 1960
Benzilic Acid, Ortho & Parachloro	•	" 1960
Benzilic Acid, 2,4 & 3,4 Dichloro		" 1960
Benzoic Acid, Ortho & Parachloro	S-2, 49	Until 1978
Benzoic Anhydride		Before 1960
Benzoin		Before 1960
Benzotrifluoride	S-2	1968 - 1975
Benzotrifluoride, Ortho, Para and Meta Chloro	S-2	1968 - 1975
Benzotrichloride	S-2	Until 1978

	Location Produced	Dates Produced
Benzotrichloride, Ortho & Parachloro	S-2	Until 1978
Benzotrichloride, 2,4 & 3,4 Dichloro	S-2	Until 1978
Benzoyl Chloride	S-2	Until 1966
Benzoyl Chloride, 2,4 & 3,4 Dichloro	49	Until 1978
Benzoyl Chloride, Ortho & Parachloro	S-2	Until 1978
Benzyl Alcohol	S-2	1967 - 1977
Benzyl Chloride	S-1	Until 1978
Benzyl Chloride, 2,4 & 3,4 Dichloro	S-2	" 1978
Benzyl Chloride, Ortho & Parachloro	S-1 & S-2	" 1978
Cresotes	S-2	" 1975
Creosol Carbonate	S-2	" 1975
Diphenyl Isodecyl Phosphite	25	" 1984
Formaldehyde	20, 36, 37	Until 1985
Formic Acid	30	1957 - 1970
Glycerol Phosphates		Before 1965
Guaiacols	49, S-1	Until 1985 -
Guaiacol Carbonate	S-1	" 1978
Herbicide (HC-1281)	S-1	" 1977
Hexamethylene Tetramine	36, 37	1982
Hydrochloric Acid	S-2	Until 1978
Lignocol	S-2	Until 1975
Maleic Anhydride	32	1960 - 1982
Nuosept 95	S-2, 49	1975 - 1985.

	•	•
	Location Produced	Dates Produced
Pentaerythritol	30	1957 - 1970
Phenyl Diisodecyl Phosphite	25	1970 - 1985 -
Phthalic Anhydride	32	1962 - 1966
Salicylaldehyde	25	Until 1970
Salicylsalicylic Acid	49	Until 1978
Sodium Formate	30	1957 - 1970
Strobane	S-1, 60	1957 - 1978
Sulfidal	37	Until 1985
Tri Octyl Phosphate	25	1970 - 1985 :-
Toluene, 2,4 & 3,4 Dichloro	S-2	Until 1978
Toluene, Ortho & Parachloro	25	Until 1978
Tolyl Aldehyde	S-1, 12	1941 - 1969
Tributoxy Ethyl Phosphate	25	1970 - 1985
Tributyl Phosphate	25	1970 - 1980
Trichloro Toluene	S-2	Until 1978
Trichlorphenyl Acetic Acid, Sodium Salt (Tri-Fen)	S-1	1967 - 1978
Tris - 2,3 - Dibromopropyl Phosphate	25	1970 - 1975
Supercryl	30	1973 - 1979
Toxaphene	S-1	1957 - 1978
Calcium Benzoate		Before 1965
Calcium Creosotate		Before 1965
Calcium GP		Before 1965
•		

	Location Produced	Dates Produced
Collargol		Before 1965
Copper Protein	•	Before 1965
GP Acid 35%		Before 1965
Orthochlorobenzal Chloride	S-1, S-2	Until 1978
Prestex		Before 1965
Pure Beta Sodium GP		Before 1965
Sodium Benzoate		1957 - 1970
Stonex		Before 1965
Glycerol Phosphates		Before 1965
Silver Proteins		Before 1965

FORDS PRODUCTS AND

RAW MATERIALS

LOCATIONS PRODUCED

AND USED

BLDG. 12

PRODUCTS AND RAW MATERIALS USED	Production Consumption X 1,000 lbs.
Benzaldehyde	M.T. 100
Toluene Activated Carbon Soda Ash	M.T. 10C L.T. 10 50-100
Ammonia	L.T. 10
Catalyst	L.T. 10
Ammonium Molybdate Sulfur Dioxide Uranium Nitrate	L.T. 10 L.T. 10 L.T. 10
Tolyl Aldehyde	M.T. 100
Xylene, 2 ^o	L.T. 10

M.T. = More than L.T. = Less than

PRODUCTS AND RAW MATERIALS USED Production Consumption X 1,000 lbs. Formaldehyde (Formox) Methanol Formic Acid (by-product) *Molybdenum Oxide & Ferric Oxide Yearly Production Consumption X 1,000 lbs. M.T. 100 M.T. 100 L.T. 10

BLDG. 25	Yearly
PRODUCTS AND RAW MATERIALS USED	Production Consumption X 1,000 lbs
Orthochlorotoluene & Parachlorotoluene	M.T. 100
Chlorine Toluene Caustic Soda Triethamolamine	M.T. 100 M.T. 100 M.T. 100 L.T. 10
Salicylaldehyde	M.T. 100
Chlorine Magnesium Oxide (Catalyst) Methanol Ortho Cresol	M.T. 100 L.T. 1 10 - 50 M.T. 100
Phosphorus Oxychloride	50 - 100 M.T. 100
Toluene Monochlorotoluene	M.T. 100
Tributoxy Ethyl Phosphate (TBEP)	м.т. 1 00
Butoxyethanol Phosphorus Oxychloride Soda Ash Tetra Butyl Titanate	M.T. 100 M.T. 100 M.T. 100 L.T. 10
Tris Octyl Phosphate	M.T. 100
2 - Ethyl Hexanol Phosphorus Oxychloride Phosphoric Acid	M.T. 100 M.T. 100 L.T. 1
Diphenyl Isodecyl Phosphite	M.T. 100
Phenol Phosphorus Trichloride Sodium Methoxide Isodecyl Alcohol	M.T. 100 M.T. 100 L.T. 10 M.T. 100
Tributyl Phosphate (TBP)	M.T. 100
Butanol Phosphorus Oxychloride Tetrabutyl Titanate Soda Ash	M.T. 100 50 - 100 L.T. 10 L.T. 10

BLDG. 25	Yearly Production Consumption X 1,000 lbs.
Tris - 2,3 - Dibromopropyl Phosphate (T-2,3-P)	M.T. 100
2,3 Dibromopropanol Phosphorus Oxychloride Soda Ash - Versene 100	M.T. 100 50-100 L.T. 10 L.T. 10

BLDG 30

PRODUCTS AND RAW MATERIALS USED	Production Consumption X 1,000 lbs.	
Pentaerythritol -	M.T. 100	
Formaldehyde Acetaldehyde Sulfuric Acid	M.T. 100 M.T. 100 50 - 100	
Formic Acid	M.T. 100	
Supercryl 100	M.T. 100	
Methyl Methacrylate Ethyl Acrylate Potassium Persulphate Dupanol WAQE Thiostop N-Dodecyl Mercaptan	M.T. 100 50 - 100 L.T. 1 L.T. 1 L.T. 1 L.T. 1	

BLDG. 32

PRODUCTS AND RAW MATERIALS USED	Production Consumption X 1,000 Lbs.
Maleic Anhydride	M.T. 100
Benzene Xylene	M.T. 100 L.T. 10
Maleic Briquettes	M.T. 100
Maleic Anhydride	M.T. 100
Phthalic Anhydride	M.T. 100
Xvlene	M.T. 100

BLDGS 36, 36A, 37, 37A, 47 PRODUCTS AND RAW MATERIALS USED	Yearly Production Consumption X 1,000 lbs.
Formaldehyde	M.T. 100
Methanol	M.T. 100
Hexamethylenetetramine	M.T. 100
Formaldehyde Ammonia (Anhydrous) Soda Ash Hi Sill Calcium Stearate Sulfuric Acid	M.T. 100 M.T. 100 L.T. 10 L.T. 10 10-50 M.T. 100
Sulfidal	50-100
Sulfur Gum Arabic Methyl Parasept Soda Ash Antifoam Borax Anti-Emulsion	10-50 10-50 L.T.1 L.T.1 L.T.1 L.T.1

BUILDING 49

•	202222110 47	Yearly
	PRODUCTS AND RAW MATERIALS USED	Production Consumption X 1,000 Lbs.
Benzaldehyde	, 2,4 Dichloro	L.T. 10
	2,4 Dichloro benzal chloride Caustic Soda Sulfuric Acid	L.T. 1 L.T. 10 L.T. 10
Benzaldehyde	, 3,4 Dichloro	
•	3,4 Dichloro benzal chloride	L.T. 10
Benzaldehyde	, Orthochloro	M.T. 100
	Crude orthochlorobenzaldehyde	M.T. 100
Benzoic Acid	, 2,4 Dichloro	10 - 50
	2,4 Dichlorobenzotrichloride	10 - 50
Herbicide (F	ree Acid)	10 - 50
	Trichlorobenzoic Acid, Sodium Salt	10 - 50
Parachlorobe	nzoic Acid	L.T. 10
•	Parachlorobenzotrichloride	L.T. 10
2,4 Dichloro	Benzoyl Chloride	10 - 50
	Acetic Acid Soda Ash Thionyl Chloride Zinc Chloride 2,4 Dichloro Benzotrichloride Methanol	10 - 50 L.T. 1 L.T. 1 L.T. 1 10 - 50 L.T. 1
Orthochlorobenzoyl Chloride		. 10 - 50
	Orthochlorobenzotrichloride	10 - 50
Parachloro B	enzoyl Chloride	50 - 100
	Parachlorobenzotrichloride	M.T. 100

•	BUILDING 49	Yearly Producti Consumpt X 1,000	lon ion
Dichloro Be	nzoyl Chloride	M.T.	100
	Parachlorobenzotrichloride	M.T.	100
Orthochloro	Benzoyl Chloride		10 - 50
	Orthochlorobenzotrichloride	-	10 - 50
Parachloro B	enzovl Chloride		50 - 100
•	Toluene Parachlorotoluene		50 - 100 50 - 100
Salicylsalic	ylic Acid	•	10 - 50
	Dimethylaniline Methanol Phosphorus Trichloride Sulfuric Acid Toluene Salicylic Acid	L.T. L.T. L.T. L.T. L.T.	10 10 10 10
Guaiacol C *		M.T.	100
	Guaiacol Crystals O-Cresol		50 - 100 50 - 100
Nuosept 95*		M.T.	100
÷.	Formaldehyde Tris (hydroxmethyl) aminomethane	M.T. M.T.	

^{*} Made in Building 49 - 1982 to 1985 Previously made in Area S-2

AREA S-1

	PRODUCTS AND RAW MATERIALS USED	Vocal v
,	•	Yearly Production Consumption X 1,000 lbs.
K-7	Benzaldehyde (Crude)	M.T. 100
(Bldg 7)	Toluene	м.т. 100
Bldg. 15 K-3	Benzyl Chloride	M.T. 100
K-J	Toluene Chlorine 1,3 Diethyl Thiourea Methanol Soda Ash Pyridine Triethylamine	M.T. 100 M.T. 100 L.T. 1 L.T. 10 L.T. 1 L.T. 1
K-3A	*Herbicide (HC-1281-S & DM-4)	M.T. 100
	Trichlorotoluene Chlorine Benzoyl Peroxide Caustic Soda Darco S-51 Chloroform Nitric Acid Pyridine Sulfuric Acid Dimethylamine Marasperse	M.T. 100 M.T. 100 L.T. 10 L.T. 10 L.T. 10 10 - 50 50 - 100 L.T. 1 M.T. 100 50 - 100 L.T. 10 L.T. 10
	Tween 20 Sodium Nitrate	L.T. 10
	*Tri-Fen	M.T. 100
	Trichlorotoluene Chlorine Benzoyl Peroxide Caustic Soda Ferrous Sulfate Marasperse Methanol Sodium Cyanide	M.T. 100 M.T. 100 L.T. 1 M.T. 100 M.T. 100 L.T. 1 L.T. 1 10 - 50 M.T. 100
	Sulfuric Acid Tween 20	L.T. 10

	AREA S-1	Yearly Production Consumption X 1,000 lbs.
Bldg. 15 K-13	Parachlorobenzyl Chloride	50 - 100
K-13	Parachlorotoluene Chlorine Dowtherm A Carbowax	50 - 100 50 - 100 L.T. 10 L.T. 1
•	Orthochlorobenzyl Chloride	
	Orthochlorotoluene	
	2,4 Dichlorobenzyl Chloride	L.T. 10
	2,4 Dichlorotoluene	L.T. 10
Bldg. 15 K-19	Strobane	M.T. 100
	Mixed Camphene Alpha Pinene Chlorine Benzoyl Peroxide Chloroform Pyridine Xylene, 2	M.T. 100 M.T. 100 M.T. 100 10 - 50 L.T. 10 L.T. 1
K-20	Orthochlorobenzotrichloride	10 - 50
	Orthochlorotoluene Chlorine Benzoyl Peroxide Pyridine	10 - 50 10 - 50 L.T. 1 L.T. 1
	Parachlorobenzotrichloride	M.T. 100
	Parachlorotoluene	50 - 100
	Orthochlorobenzal Chloride	M.T. 100
	Orthochlorotoluene	M.T. 100
	3,4 DC Benzal Chloride	L.T. 10
	3,4 DC Toluene	L.T. 10
K-13	Dichlorobenzyl Chloride	10 - 50
	Chlorine Dichlorotoluene	L.T. 10 L.T. 10

AREA S-2

	PRODUCTS AND RAW MATERIALS USED	Yearly Production Consumption X 1,000 lbs.
Dept. K-9	Orthochlorobenzoic Acid	M.T. 100
	. Orthochlorotoluene	M.T. 100
	Parachlorobenzaldehyde	M.T. 100
	Parachlorotoluene	M.T. 100
Dept K-9	Benzoyl Chloride	L.T. 10
	Chlorine Benzotrichloride	L.T. 10 L.T. 10
Dept K-1	Parachlorobenzotrichloride	L.T. 10
	Parachlorotoluene Chlorine	L.T. 10 L.T. 10
	2,4 Dichlorobenzotrichloride	M.T. 100
	2,4 Dichlorotoluene	50 - 100
	3,4 Dichlorobenzotrichloride	L.T. 10
	3,4 Dichlorotoluene Sulfuric Acid	L.T. 10 L.T. 17
	Parachlorobenzyl Chloride	M.T. 100
	Parachlorotoluene	50-100
	2,4 Dichlorobenzal Chloride	L.T. 10
	2,4 Dichlorotoluene	L.T. 10
	2,6 Dichlorobenzal Chloride	L.T. 10
	2,6 Dichlorotoluene	L.T. 10
K-9	Orthochlorobenzal Chloride	M.T. 100

AREA S-2

Yearly
Production
Consumption
X 1,000 lbs.

Dept.	' · · · · · · · · · · · · · · · · · · ·	
D-1	Creosote	10-50
	Cresote HA Oil Caustic Soda	10-50 L.T. 10
•	Guaiacol C	•
	Guaiacol Crystals Ortho Cresol	
	Creosote BW & NF	10-50
,	Creosote Cliff Dow	10-50
	Lignocol	10-50
·	Soda Ash Zinc Dust	L.T. 10 L.T. 1
Dept. K-9	Orthochlorobenzaldehyde	M.T. 100
	Orthochlorotoluene Chlorine Chloroform Soda Ash Sodium Hypochlorite Sulfuric Acid Zinc Dust	M.T. 100 M.T. 100 L.T. 1 10-50 L.T. 1 L.T. 10

•	AREA S-2	Yearly Production Consumption X 1,000 Lbs.
Dept.	Hydrochloric Acid	M.T. 100
K-6 -	Activated Carbon Ammonia (aqueous) Caustic Soda Hydrazine Hydrate Soda Ash	L.T. 10 L.T. 1 50 - 100 L.T. 1 L.T. 1
	Monochlorotoluene - Crude	M.T. 100
	Toluene (Gals) Chlorine Stannic Chloride Sulfuric Acid Chloroform	M.T. 100 M.T. 100 L.T. 10 M.T. 100 L.T. 10
Dept. H-5	Trichlorotoluene	M.T. 100
n-3	Orthochlorotoluene Chlorine Caustic Soda	M.T. 100 M.T. 100 10 - 50
	2,4 & 3,4 Dichlorotoluene	M.T. 100
	Parachlorotoluene Chlorine	10 - 50 10 - 50
	Orthochlorobenzotrifluoride	M.T. 100
· .	Orthochlorobenzotrichloride Antimony Pentachloride	M.T. 100 L.T. 1
	Caustic Soda Hydrofluoric Acid	L.T. 10 50 - 100
	Parachlorobenzotrifluoride	L.T. 10
	Parachlorobenzotrichloride	L.T. 10
H-5	Benzyl Alcohol	M.T. 100
	Benzyl Chloride Soda Ash	M.T. 100 L.T. 10
	Nuosept 95	50 - 100
	Formaldehyde Tris (hydroxymethyl) aminomethane	50 - 100 50 - 100

AREA S-2

,		Yearly Production Consumption X 1,000 lbs
H-5	Metachlorobenzotrifluoride	L.T. 10
	Benzotrichloride Antimony Pentachloride	L.T. 10 L.T. 1

PROCESS DESCRIPTIONS AND

SIMPLIFIED FLOW DIAGRAMS

PRODUCTS MADE AT FORDS

BY TENNECO

1964 TO 1982

BY NUODEX

1982 TO 1985

FORDS PLANT

Table of Contents

Dept.	Product	Page
В-В	Sulfidal	A-22
C-1	Silver Formaldehyde	A-23
C-2	Hexamethylenetetramine	A-24
C-2-A	Hexa Powder	A-25
T-1	*Formox Formaldehyde	A-27
H-1,2	O/C & P/C Toluene	A-28
11-5-1	T/C Toluene	A-29
11-6	2.4 D/C Toluene	A-30
1:-3	Benzyl Chloride	A-31
1:-3-B	Herbicide HC-1281-DH-4	A-32
K-3-D	Tri-Fen (Sodiur Salt)	A-33
K-6 & K-6-A	Muriatic Acid	A-35
K-9-A	O/C Benzaldehyde-O/C Benzoic Acid	A-36
K-9-B	P/C Benzaldehyde	A-38
K-18-A	* Diphenyldecyl Phosphite (V-142)	• A-39
K-18-D	*Tributoxycthyl Phosphate (T-BEF)	A-40
K-18-E & C	Tris 2,3 Dibromopropyl Phosphate (T-2,3-P)	A-43
	(Single Kettle Process)	•
K-18-E & G	Tris 2,3 Dibromopropal Phosphate (T-2,3-P)	A-44
	(Two Kettle System)	2.46
K-18-F	Triphenyl Phosphite (T-PP)	A-46
K-19-C	Strobanc-T 90,	A-47
E-19-D	Strobanc-1 100%	A-48
r.F.	2,4 D/C Benzoic Acid	A-50
P.P.	2,4 D/C Benzoyl Chloride	A-51
P.P.	P/C Benzoyl Chloride	A-52
F.P.	*Gualacol "C"	A-53
M-1	Maleic Anhydride Molten	A-54
E-1-A	Maleic Anhydride Briquettes	A-56
V-1	Supercryl 100	A-58
PF	*Nuosept 95	A-59
K-18	*Tri-octyl Phosphate	A-60
K-12	Benzaldehyde	(1)
P-1	Pentaerythritol	(1)
Z-6	Sewage Plant	A-61

* Made by Nuodex and Tenneco

Note (1) - No process diagram included

Listing of areas where hazardous materials have been used, stored, manufactured, etc. as depicted on Site Plan

Bldg. No.

Activity

Former site (until 1969) of benzaldehyde production. The raw material was toluene, which was stored in the south tank farm (south of Bldg. 22, north of railroad siding). The building had concrete floors. The building also had a trough to catch spills which were directed to the plant sewage system.

A minor amount of tolyl aldehyde was produced in this area.

Control Room, Formaldehyde Plant. Operations were shut down in February, 1985. Startup was in 1968. The raw material used was methanol, stored in a 600,000 gallon tank north of Bldg. 30.

Formaldehyde storage tanks were enclosed with berms to lead spills to a simple catch basin. The methanol storage tank has an earthen berm to contain spills. The reactor area was protected with a concrete pad.

Cleaning out and decontamination of equipment in this department is currently underway.

25 Former site of Phosphate Ester manufacturing operations.

Manufacturing ceased in September, 1984. All manufacturing equipment and storage tanks in and adjacent to this facility were cleaned and removed.

The major raw materials used in this department were phenol, 2-ethyl hexanol, butoxyethanol, isodecanol phosphorus oxychloride and phosphorus trichloride, all of which were stored immediately adjacent to the department. Product was stored in bulk in the department, in large storage tanks in the south tank farm and adjacent to Building 30.

This building, as all other manufacturing buildings, had concrete floors and sewage troughs to lead spillage, tank washings, etc. to the plant sewage treatment system.

Phosphate Ester manufacturing started at Fords in 1970.

The western half of Building 25 was built in 1936 for the production of ortho and parachlorotoluene, using toluene as the raw material. Part of the production was sold; the remainder was used as raw materials for various products at other buildings in the southwest quadrant of the plant. See Area S-1 and S-2.

Bldg. No.

Activity

25 (cont'd) The eastern half of Building 25 was used for the production of salicylaldehyde until approximately 1970. Raw materials used were o-cresol, chlorine and phosphorus oxychloride, producing tricresyl phosphate as an intermediate. The product was shipped in drums and tank trucks.

30

Originally constructed for the manufacture of pentaerythritol in 1957. Pentaerythritol shutdown in 1970. Raw materials were formaldehyde and acetaldehyde. Formic acid was a by-product. The product, pentaerythritol is readily biodegradable, is a sugar-like substance, and not considered hazardous.

Upon shutdown the equipment was cleaned out and removed in a manner consistant with local fire regulations and reasonable safety standards.

The facility was a relatively modern one, serviced with good floor drainage, etc.

Subsequent to the above operation, Supercryl 100 was made for approximately five years in the mid to late 1970's using some equipment to the south of Bldg 30. Raw materials used were methyl methacrylate and ethyl acrylate. The storage tanks were emptied and cleaned out upon shutdown. Most of the equipment is still in place.

31

A modern clean warehouse built in 1960 to store maleic andydride briquettes in bags. The flaker building, an appendage to the south, was the site for manufacturing briquettes from molten maleic anhydride. Molten maleic was stored to the south of Building 31. Briquetting operations ceased under Tenneco in 1982.

32

Control Room, Maleic Anhydride Plant. The plant was started up in 1960 (Heyden Newport) and shutdown in 1982 by Tenneco. The manufacturing facilities are depicted immediately to the south of Building 32.

Benzene was the raw material used for the maleic anhydride and was stored in a 250,000 gallon bermed tank to the south. Benzene was received in tank trucks at this storage tank and in tank cars at the siding to the west of Building 31. Ortho xylene was also used on the site.

The product, molten maleic anhydride, was loaded in tank trucks to the north of the two 20,000 gallon horizontal product tanks and at the railroad siding. A significant amount was transferred to the flaker building, Building 31, for the briquetting operation.

Bldg. No.

Activity

32 (cont'd)	Maleic acid solution was an intermediate product made and stored in the vicinity of the Scrubber Tower.
•	Part of the Maleic plant facilities were used to produce phthalic anhydride (raw material is ortho xylene) for a short time in the 1960's.
	The reactor area is stoned. The benzene day tank and xylene cut tanks have concrete pads and dikes and serviced by troughs built to lead spillage and tank washings to the plant sewage treatment plant.
35	Warehouse. Built for original plant in 1922. Used for storage of products in drums and bags, equipped with both truckloading and box car loading platform.
36, 36A 37, 37A	Site of formaldehyde and hexamethylene tetramine manufacturing facilities from 1923 until 1982 when they were shutdown under Tenneco. The raw materials, methanol and ammonia, are adjacent to the buildings. Formaldehyde, an intermediate product in the operation, was stored to the west of Building 37A. The formaldehyde and methanol storage areas have concrete pads, sumps and drainage that direct spillage to the plant treatment system.
	Sulfilal, an FDA registered product, was produced in the west end of Building 37.
39	Utility Building, Formaldehyde operation. Contains formal-dehyde filter, mixed bed deionizer, water softener.
47	Building for three 10,000 gallon methanol tanks for Hexa process. Tanks have been emptied and cleaned.
49	Manufacturing facilities for Nuosept 95 and Guaiacol C. All equipment has been cleaned and removed from site. Operation shutdown in 1985 by Nuodex Inc.
	The main raw materials used here were formaldehyde, ocresol and tris hydroxymethyl amine. Nuosept 95 is an EPA registered bacteriostat.
60	Open walled warehouse built in 1965 for the storage of Strobane, a FIFA registered pesticide. Strobane bulk storage and drumming facilities were located here.
	Building 60 is currently used to store hazardous and non-hazardous waste in a segregated portion of the warehouse and empty containers.

Bldg. No.

Activity

Sewage Settling Basins These basins were originally built to separate solids from our sewage treatment system before passage of that sewage to the Middlesex County Sewage Authority. These basins are currently being bypassed and closure plans have been submitted to the New Jersey Department of Environmental Protection.

Area S-1

The former site of Building 7 and Building 15. Building 7 was demolished in the '60's and Building 15 was demolished in 1980 by Tenneco.

Building 15 was the site of various chlorination processes, including benzyl chloride, Strobane, Tri-fene, Fenac, and para chloro benzyl chloride. The raw materials such as toluene, mixed camphenes, and dimethylamine were stored to the south of the building. Chlorine was received in tank cars at the railroad siding to the south. Products were shipped out in drums, carboys, tank trucks and tank cars. Tri-fene and Fenac were EFA registered herbicides.

Building 7 (K7) was the original site for benzaldehyde production (see Bldg. 12).

Area S-2

Site of buildings demolished in 1980 by Tenneco. The products were mostly chlorination products starting with the ortho and para-chlorotoluene produced in Building 25 and included di- and trichlorotoluene, ortho and para-chlorobenzaldehyde, ortho and para chloro benzoic acid. etc. (see product listing).

Hydrogen chloride was a by-product of all the chlorination reactions and was converted to hydrochloric acid solution in this area. The hydrochloric acid was sold as a firsthed product.

Benzyl alcohol and fluorinated toluene derivatives (e ϵ benzotrifluoride) were producted in this area for a $\epsilon\epsilon$ -latively short time in the late '60's and early '76's

- Area L-1* Inactive landfill by Industrial Avenue, north of East Pond. Approximate size one (1) acre.
- Area L-2* Inactive landfill south of Maleic Anhydride plant Approximate size one (1) acre.
- Area L-3* Inactive landfill south of settling basins. Approximate size twelve (12) acres.

Ato

ATTACHMENT B

STORAGE FACILITIES CONTAINING HAZARDOUS MATERIALS

11A - Storage Vesse etc. Containing Hazardous Material

STORAGE TANKS

A summary of chemical storage tanks is presented below.

			Throughpu	t ·		
Tank No.	Material Contained	Capacity Gals.	Gals/Yr 1000's	Material of Construction*	Year Built	Location
10F	Formaldehyde *	100,000	3,000	S	1968	Area H
11F	Formaldehyde *	100,000	3,000	S	1968	Area H
9F	Formaldehyde *	200,000	3,000	S	1973	Area H
12F	Formaldehyde *	10,000	150	S	1967	Area H
1F	Caustic Soda, 50%	50,000	20	C	1957	Area H
3F	Ammonia*	6,000	100	С	1960	Area H
18M	Propane	12,000	40	. с	1960	Area H
	Fuel Oil (1)	60,000)		С	1951	Boiler Rm.
	Fuel 0il (2)	30,000)	1,500	C	1944	Boiler Rm.
(*Mate	Gasoline erials removed as of 4/1	2,000 /85.)	2	С		Gate House

SURFACE IMPOUNDMENTS

Two impoundment basins, each approximately 150 ft. by 150 ft. by 3 ft. deep, formerly used as settling ponds. Plans to close these basins have been submitted to the Department. Ponds were built in 1957.

3. <u>LANDFILLS</u>

The following inactive landfills have been reported to the Department and are depicted on Site Plan No. 1.

Landfill L-1: near Industrial Avenue, north end of Middle Lake.

Approximate size, one (1) acre.

Landfill L-2: south of Maleic plant. Approximate size one (1)

acre.

Landfill L-3: Sludge disposal area south of settling basins.

Approximate size, twelve (12) acres.

DRUM STORAGE AREA

Storage of hazardous waste and drummed process material is held on a raised concrete pad approximately 100 ft. by 165 ft. (building #60 on Site Plan No.1). The pad is covered with a water proof roof.

*S - Stainless Steel

C - Carbon Steel

Note (1) - 3 at 20,000

(2) - 3 at 10,000

ATTACHMENT C SAMPLING AND ANALYSIS PLAN

NUODEX INC.

Fords, New Jersey Facility

Sampling and Analysis Plan for Environmental Cleanup Responsibility Act (ECRA)

NUODEX INC.

SAMPLING AND ANALYSIS PLAN

Table of Contents

Introduction	C- 1
Environmental Setting	C- 2
Areas of Potential Environmental Concern	C- 3
Sampling Locations	C- 7
Sampling Methods and Analysis	C-11
Report	C-17
List of Tables	
Table 1 - Sampling and Analysis Summary	C-13
Table 2 - Taboratomy Cample Analysis	0.15

Page

INTRODUCTION

This Plan has been prepared for the Nuodex Inc. facility located on Industrial Avenue in Fords, New Jersey. The Plan has been developed from site specific information on the facility operations and environmental setting to address requirements of NJAC 7:1-3.7(d)14.

Environmental Setting

The Nuodex Inc. facility in Fords, New Jersey is located in an industrial area adjacent to the north shore of the Raritan River. Surficial soils consist of sand/clay mixtures containing variable amounts of organic debris and fill. The site's natural soils are derived from alluvial and marine tidal marsh deposition. These soils have been mixed with fill material as the area was developed. Sandy soils predominate in the northern portion of the property, grading into a loamy clay toward the Raritan River. Groundwater flows in a southerly direction toward the Raritan River, and is generally found within five feet of ground surface.

References

Technical Data Supplied by Nuodex Inc.

Engineering Soil Survey of New Jersey, Report No. 10, Middle-sex County, Rutgers University, November 1953.

Interim Soil Survey Report, Middlesex County, New Jersey, U.S.D.A., October 1978.

Areas of Potential Environmental Concern

Sixteen (16) areas of potential environmental concern have been selected for this site. Each of these areas is discussed below. All areas are indicated on the general facility map (map 3) enclosed with this document.

Area A - Background

One sample will be collected from the northwest corner of the property to determine the levels of contaminants present as background in the soil. This area was selected in view of its distance from the production areas.

Area B - West Lake, East Lake and Hartmans Pond

Due to the potential for materials to collect in the ponds from incidental subsurface migration or spillage, a sediment sample will be collected from each pond for analysis.

Area C - Landfill L-1

This landfill area has been addressed by the NJDEP Division of Water Resources in issuance of a discharge to groundwater permit (#NJ0000116 effective July 15, 1984. Sample locations and analytical results are presented in Attachment E, Volume 4). The landfill was used for general waste material disposal.

Area D - Non-Production Area

Due to the potential for surface and subsurface migration of contaminants, soil samples will be collected in this area for analysis. A white material had been observed and sampled in this location. Results of this analysis are presented in Attachment E, Volume 4, in the "off site contamination" section.

Area E - Parking Lot and General Office Area

This area is a general non-production area although there is record of a transformer oil spill next to Building \$55. A soil sample will be taken at the point of the transformer oil spill for analysis.

Transformers are located adjacent to building #58. Inspection of the area surrounding the transformers indicates the possiblity of transformer oil contamination. A surface wipe sample to define the type and presence of this contamination is included in the analysis plan.

Area F - General Plant Production Area

This area includes Building Nos. 22, 23, 35, 36, 37, 46 and 47. Soil samples will be collected for analysis at high traffic paths and storage sites within this areas. Six (6) underground oil storage tanks are located adjacent to Building Nos. 22 and 35. The tanks will be removed and contaminated soil excavated. Soil samples will be taken from the excavation area and analyzed to insure removal of all contaminated material.

Transformers are located adjacent to buildings 37, 25 and 23. Inspection of the area surrounding the transformers indicates the possibility of transformer oil contamination. Surface wipe samples to define the type and presence of this contamination are included in the analysis plan.

Area G - General Plant Production Area

This areas includes Buildings 30, 40 and 49. Soil samples will be collected for analysis at high traffic paths and storage sites within this area.

Area H - Formaldehyde Production Area

Buildings 20 and 24 are included in this area along with an outdoor production facility and chemical storage areas. Due to potential for contamination from incidental spillage, soil samples will be collected from production and storage areas. A sample will also be collected in an area between production and storage facilities and a spill catch basin to indicate contamination from past surface spills.

Area I - Maleic Production Area

The production area for maleic anhydride includes raw material storage, delivery areas, an outdoor production facility and a product storage warehouse. Due to the potential for material spillage this area has been designated for soil sampling and analysis.

Area J - Discontinued Production Area S-2

The production buildings in this area were demolished in 1980. Due to the potential for soil contamination from material handling this area has been designated for soil sampling and analysis.

Area K - Drain Storage Area

This area is the site of past drumming operations and presently stores hazardous and non-hazardous wastes. Due to the potential for surface contamination from incidental spillage in the open walled warehouse, the soil adjacent to the warehouse has been designated for sampling and analysis.

Area L - Discontinued Production Area S-1

The production buildings in this area were demolished in the 60's and 1980. Past chemical storage and tanker loading sites are also included in this area. Due to the potential for incidental chemical spills, this area has been designated for soil sampling and analysis.

Electrical equipment is located in this area. Inspection of the area surrounding the equipment indicates the possibility of oil contamination. A surface wipe sample to define the type and presence of this contamination is included in the analysis plan.

Area M - Production and Wastewater Treatment Facility

This area includes Building #12, the wastewater treatment facility and the sludge lagoons. The sludge lagoons have been addressed by the NJDEP, Division of Water Resources in issuance of a discharge to groundwater permit (#NJ0000116 effective July 15, 1984. Sample locations and analytical results are presented in Attachment E, Volume 4). Soil samples will be collected in the area of Building #12 and the treatment plant due to the possibility of contamination from incidental chemical spills.

Transformers are located on top building #12. Inspection of the area surrounding the transformers indicates the possiblity of transformer oil contamination. A surface wipe sample to devine the type and presence of this contamination is included in the analysis plan.

Area N - Landfill L-2

المؤلفي المؤلفين الم

This area has been addresed by the NJDEP, Division of Water Resources in issuance of a discharge to groundwater permit (#NJ0000116 effective July 15, 1984. Sample locations and analytical results are presented in Attachment E, Volume 4). The area was used for general waste material disposal.

Area O - Landfill L-3

This area has been addressed by the NJDEP, Division of Water Resources in issuance of a discharge to groundwater permit (#NJ-0000116 effective July 15, 1984. Sample locations and analytical results are presented in Attachment E, Volume 4). The area was used for sludge disposal.

Area P - Non-Production Area

Due to the potential for surface and subsurface contamination, soil samples will be collected in this area for analysis.

Facility Groundwater Quality

The Nuodex, Fords facility has thrity-six (36) onsite monitoring wells which have been periodically sampled for analysis to indicate groundwater quality. Results of these analysis are enclosed as part of Attachment E, Volumes 3 and 4. It should be noted the ground-water represents a complex situation of on-site and off-site contamination.

Table 1

NUODEX INC. - FORDS, NJ SAMPLING AND ANALYSIS SUMMARY

Sampling	Depth of	Sample	Samples for	and the second s
Points	Auger Hole (inches)	Increments (inches)	Analysis	Analysis
A ₁	24	0-6, 6-12	One 0-6"	Priority pollutants (less volatiles), pH, total phosphate
		12-18, 18-24	One 18-24"	Volatile organics
B ₁₋₃	· -	Ekman dredge Sediment grab	Three sediments	Priority pollutants, total phosphates, pH
C.	-	-	NONE	· -
D ₁₋₂	24	0-6, 6-12 12-18, 18-24	One 0-6" composite One 18-24" composite	pH Volatile organics
E ₁₋₂	24	0-6, 6-12, 12-18, 18-24	One 0-6"	PCB
	-	Surface wipe	One	PCB
F ₁₋₁₁	24	0-6, 6-12 12-18, 18-24	Four 0-6" composites Four 18-24" composites	pH, phenols, total phosphate Volatile organics
	-	Surface wipe	Three	PCB
G ₁₋₄	24	0-6, 6-12 12-18, 18-24	Two 0-6" composites Two 18-24" composites	pH Volatile organics
H ₁₋₄	. 24	0-6, 6-12 12-18, 18-24	One 0-6" composite One 18-24 composite Two 0-6" Two 18-24"	pH Volatile organics pH Volatile organics



Table 1 (continued)

Sampling Points	Depth of Auger Hole (inches)	Sample Increments (inches)	Samples for Analysis	Analysis
r ₁₋₇	24	0-6, 6-12 12-18, 18-24	One 0-6" composite One 18-24" composite Five 0-6" Five 18-24"	pH Volatile organics pH Volatile organics
J ₁₋₆	24	0-6, 6-12 12-18, 18-24	Three 0-6° composites Three 18-24° composites	pH Volatile organics
K ₁₋₅	24	0-6, 6-12	One 0-6° composite	Priority pollutants (less volatiles), pH, total phosphate
• •		12-18, 18-24	One 18-24 composite	Volatile organics
	24	0-6, 6-12	One 0-6"	Priority pollutants (less volatiles),
		12-18, 18-24	One 18-24"	pH, total phosphate Volatile organics
L1-9	24	0-6, 6-12 12-18, 18-24	Three 0-6" composites Three 18-24" composites Two 0-6" Two 18-24"	pH, pesticides Volatile organics pH, pesticides Volatile organics PCB
	-	Surface wipe	One	
M ₁₋₃	24	0-6, 6-12 12-18, 18-24	One 0-6" composite One 18-24" composite	pH pH, volatile organics
		Surface wipe	One	РСВ
N :		~ '	NONE	-
0	, -	-	NONE	-
P ₁₋₂	. 24	0-6, 6-12 12-18, 18-24	One 0-6" composite One 18-24" composite	pH Volatile organics

ATTACHMENT D

EQUIPMENT AND MATERIAL REMOVED FROM FACILITY

ATTACHMENT D

EQUIPMENT AND MATERIAL REMOVED FROM FACILITY

The information included in this attachment was provied to PAS by Nuodex. In addition to these decontamination/decommissioning procedures, PAS recommends that Nuodex have the sewer system cleaned since chemical spills were washed down to these sewers. A listing of emptied tanks volume, construction material and last material contained is also presented here on pages D-3 to D-5.

TIEM #15

DECONTAMINATION/DECOMMISSIONING PROCEDURES

Laboratory

Laboratory chemicals will be inspected, sorted, and disposed of as follows:

- A. Hazardous substances that can be used at other Nuodex Inc. sites will be transferred by Nuodex.
- B. Hazardous substances that must be disposed of will be handled by B & P Environmental Resources, Inc. of Ridgewood, NJ. The materials will be packed and transported to Stablex South Carolina, Inc. in Rock Hill, SC, and incinerated.

The laboratory area will be left clean and empty.

2. Warehouse (Buildings 30, 31, 35, and 60

Hazardous materials from all warehouses will be returned to vendors, shipped to customers, or transferred to other Nuodex Inc. sites. Hazardous materials that cannot be used or sold by Nuodex Inc. will be disposed of. All required disposal will be handled by B & P Environmental Resources, Inc. of Ridgewood, NI

After all materials have been removed, each warehouse will be swept and washed down, using proper disposal methods.

3. Pilot Plant (Bldg. 49)

All finished product and raw materials will be shipped to customers or transferred to other Nuodex Inc. sites. Operating equipment in the building will be cleaned and sent to Nuodex Inc. in Elizabeth, NJ.

After all materials and operating equipment have been removed, the building will be swept clean and then washed down with water using proper disposal procedures.

4. Formaldehyde Unit (North of Bldg. 20)

Hazardous materials will be returned to vendors or shipped to customers. Any hazardous material that cannot be used or sold by Nuodex Inc. will be disposed of. All required disposal will be handled by B & P Environmental Resources, Inc. of Ridgewood, NJ.

Operating equipment will be emptied and rinsed with water. The Dowthern system will be drained by Nuodex Inc. and chemically cleaned by an outside contractor. All equipment will be drained and washed and left clean and dry. All clean out waste will be disposed of using proper procedures.

- 5. Maleic Andhydride Unit (including Control Bldg.)
- Benzaldehyde Building (empty)
- 7. Phosphates Unit (including Bldg. 25)
- 8. Hexamethylenetetramine (including Bldgs. No. 36, 36A, 37, 46, and 47)
- 9. Silver Formaldehyde (including Bldg. 37A)

Manufacturing in the buildings and process units covered by items 5 through 9 above has been discontinued for time periods ranging from several months to several years. None of these areas have been in production in 1985 and only the Phosphates unit was operating in 1984. All equipment related to Phosphates production was sold to Borg-Warner Chemicals, Inc. in 1984. The Phosphates building (No. 25) remains the property of Nuodex Inc.

There are no hazardous materials remaining in the areas covered by items 5 through 9. All equipment remaining in these areas has been or will be washed with water. The buildings will be washed down with water or swept. The wastes will be disposed of properly.

FORDS TANKS

No.	Mat'l of Construc- tion	Type	Capacity Gals	Last Mat'l Contained Comments
TANKS	AT BLDGS. 47	7 & 37-A		
1C	CS:	H	16,700	Ammonia
2C	CS	H	16,700	Ammonia
3C	GL	H	10,000	Sulfuric Acid
4C	CS	v	1,000	Methanol,
10C	CS	H	10,000	Methanol
11C	CS	н	10,000	Methanol
12C	CS	н	10,000	Methanol
13C	CS	11	10,000	Methano1
14C	CS	Н	10,000	Methanol In Eldg 47
15C	CS	H	10,000	Methanol In Bldg 47
16C	CS	н	10,000	Methanol In Bldg 47
	EAST OF BLD	GŞ.		
1F	CS .	v	50,000	Caustic Soda
2F	SS	v	50,000	Orthochlorotoluene
3F	CS	Н	12,000	Ammonia Solution
4F	CS	Н	3,000	Caustic Soda
5F	CS	H	6,000	Caustic Soda
6F	CS	v	600,000	Methanol
7F	CS	v	500,000	Water
8F	SS	н	24,000	Methyl
9F	SS	v	200,000	Methacrylate Formaldehyde
10F	SS	v .	100,000	Solution Formaldehyde
11F	SS	v	100,000	Solution Formaldehyde
13F	CS	v	5,000	Solution Dowtherm A

		last Mat'l Comments
pacity Gals	Last Mat'l Contained Comments	Parachlorotoluene - Orthochlorotoluene
,500	Sulfuric Acid	Camphene
,000	Caustic Soda Solution	No. 6 Fuel Oil Underground Tank No. 6 Fuel Oil Underground Tank
	Maleic Anhydride Distillation	Fuel Oil Underground
_	Column Maleic Acid Scrubber	. 4 Fuel Oil Underground
,600	Benzene	No. 6 Fuel Oil Underground
,000	Tempered Water	6 Fuel Oil Underground
,000	Maleic Anhydride Reboiler	No. 6 luci Tank
,000	Sodium Nitrate(1)	Water
,000	Sodium Nitrate(1)	Sodium Chloride
,500	Ammonia Solution	Solution Sodium Chloride
,000	Maleic Acid	Solution Lime Slurry
,000	Propane	Sewage Effluent
,775	Water	Benzaldehyde
.000	NO ₂ Fuel Oil	
000	Xylene	Caustic Soda
000	Benzene	D.I. Water
200	Maleic Anhydride	Water
	• • • • • • • • • • • • • • • • • • •	Supercryl
00	Strobane	Pentek Process
00	Toluene	
)0		
	T-BEP	
10	V-142	•

CLOSURE & POST-CLOSURE PLANS FOR THE SETTLING LAGOONS AT THE NUODEX INC. FORDS FACILITY

NUODEX INC.
TURNER PLACE
PISCATAWAY, NEW JERSEY

SEPTEMBER 1985



165 Fieldcrest Ave + CN 7809 + Edison, New Jersey 08818-7809 + (201) 225-2000

21

Closure and Post-Closure Plans
For The Settling Lagoons
at the Nuodex Inc. Fords Facility

September 1985

Introduction

These closure and post closure plans for the settling lagoons at the Nuodex Inc. Fords facility are submitted pursuant to requirements of Nuodex's NJPDES initial interium permit for Discharge to Groundwater - IWMF No. NJ0000116 (7-15-84).

Preparation of this PAS Closure/Post - Closure Plan has been performed using the following information:

- 1. All sludge from the lagoon has to be solidified and removed from site.
- The sludge has been classified as I.D. #27 waste by NJDEP Bureau of Hazardous Waste Planning and Classification.
- 3. Disposal of this material (after solidification) at the Edgeboro Landfill has been approved by Mr. Jack Whitman, Manager of the disposal facility.

A recent filing by Nuodex Inc. has removed the settling lagoons from the Resource Conservation and Recovery Act (RCRA) facility list (See Attachment 1). All procedures and methods prescribed in this Closure/Post-Closure Plan will be performed in accordance with applicable NJDEP regulations. These include, but are not limited to, N.J.A.C. 7:14A and 7:26.

NUODEX INC. FORDS, NEW JERSEY

Sludge Lagoon Area Closure Plan

TABLE OF CONTENTS

			Page
	roduct le of	cion Contents	i ii
		Figures Attachments	iii iii
A. B.		ral Description of Settling Lagoon Area ription of Closure Procedures	1 2
	1. 2. 3.		2 2
	4.	Lagoon Material Transport and Disposal of Sludge	2 3
	6. 7.	Post Excavation Sampling and Analysis Backfilling Final Grading	3 3 3 3
	9.	Site Restoration Equipment Decontamination Closure Certification	3 4 4
c.	1.	Closure Procedures Groundwater monitoring Area Maintenance	5 5 5
D.	Exect	ation Schedule and Cost Estimate for Closu	ire/6

NUODEX INC. FORDS, NEW JERSEY

Settling Lagoon Area Closure Plan

Pa	a	e
		_

List of Figures

			General S				- 1	6
Figure	2	-	Settling	Lagoon	Area/General	Flow	Diagram	9

List of Attachments

Attachment	T	_	Acknowledgement of Removal
			of Settling Lagoons from
			RCRA Listing
Attachment	2	-	Analysis of Sludge Material
			From Nuodex Inc. Fords Facility
Attachment	3	-	Transmittal Classifying Sludge
			Non-Hazardous I.D. #27
Attachment	4	-	Post-Excavation Sampling and
			Analysis Plan



A. General Description of Settling Lagoon Area

The two settling lagoons are located at Nuodex Inc's Fords, New Jersey facility. By way of background, the settling lagoons were originally constructed in 1957 by Heyden Newport Chemical Corp., then the owner of the Fords facility. Tenneco Chemicals, Inc. purchased Heyden including the Fords facility, in 1964. Newport, December 22, 1982 Nuodex Inc. purchased the Fords facility from Tenneco Chemicals. During the period of 1957 to 1964 each lagoon received treated effluent wastewater resulting from the neutralizing of process wastewaters. The effluent from the lagoons discharged to Middlesex County Utilities Authority (MCUA). In 1974 Tenneco Chemicals altered the flow pattern in the lagoons such that wastewater flowed across the first settling lagoon directly into the the MCUA sewerage system. In January 1983 construction of a pipeline directly connecting the neutralizer and the MCUA's sewer line was completed. Since completion of this direct connection, wastewater has not entered the lagoons. Sludge was last removed from the lagoons in 1973.

The two (2) lagoons are located proximate to the center of Nuodex's property. Figure 1, titled General Site Map, provides the location of these lagoons. Approximately two feet (2 ft.) of sludge covers the base of the lagoons. Each lagoon was designed to be 160 feet long by 150 feet wide and three feet (3 ft.) deep. The earthen berms forming the perimeter of the lagoons serve to elevate the lagoons above the surrounding topography. Figure 2, titled Sludge Lagoon Area, provides an overview and cross-section of the lagoons. Samples of the sludge in both lagoons were extensively analyzed in January 1983 and June of 1984 according to parameters requested by NJDEP personnel. A full listing of the analytical are presented in Attachment 2 of results submission.

Pursuant to the results of the laboratory analyses, the sludge material was classified as an industrial waste I.D. #27 (non-hazardous) by the NJDEP's Bureau of Hazardous Waste Planning and Classification. A photocopy of the transmittal which conveyed this information can be found in Attachment 3 of this document.

B. Description of Closure Procedures

The closure procedures discussed below are to be performed by an experienced environmental cleanup contractor. Supervision during the execution of the closure steps identified below will be performed by a responsible technical supervisor to insure proper execution of the closure plan. Each step is to be performed in the order listed below.

1) Site Preparation

Proper staging and equipment access locations will be chosen at the site. Should precipation occur immediately prior to or during the closure procedures, standing water on the lagoons is likely to be encountered. If this situation arises, the standing water will be discharged to the Middlesex County Utility Authority's (MCUA) sewerage system. Approval of this operation by the MCUA will be acquired prior to discharge.

Solidification of Sludge

Prior to removal from the lagoons, the sludge will be solidified. In order to perform the most economical and least time consuming solidification of this material, the earthern berm materials forming the perimeter of the lagoons will be used (mixed) for stabilization purposes. Additional solidification will be required using fly ash, vermiculite and/or cement added until the material is coherent and acceptable for disposal.

3) Excavation and Removal of Settling Lagoon Material

Excavation and removal of the sludge will begin once the material has been solidified. A large backhoe or dragline will be used to remove the stabilized material and place it in transport vehicles. These vehicles will carry all necessary licenses and display placards as required.

At a minimum, excavation will be performed to a depth of two (2) feet below the sludge's original surface elevation. If groundwater is not encountered at the two feet depth (2 ft.) depth, another foot (1 ft.) of soil will be removed. Visual inspection of the area will then be performed and any additional sludge observed will be removed. Should groundwater be encountered at any depth, excavation at that point will be terminated.

4) Transport and Disposal of Sludge

Once a transport vehicle has been loaded with the stabilized sludge, the vehicle will proceed immediately to Edgeboro Landfill. Approval has been given to Nuodex Inc. for disposal of this material at the Edgeboro facility. The approval was provided by Mr. Jack Whitman, a representative of Edgeboro.

5) Post Excavation Sampling and Analysis Plan

Attachment 4 of this document contains a detailed Post Excavation Sampling and Analysis Plan for the sludge lagoon area.

Items 6,7 and 8 discussed below are contingent upon the results of the analyses identified in Attachment 4 of this document. The NJDEP will give the order to proceed with items 6,7 and 8.

6) Backfilling

When the NJDEP has given the order to proceed, the entire sludge lagoon area will be covered with a one foot (1 ft.) layer of certified clean backfill. The depth of backfill specified in this step, one foot is based upon the lagoon's raised design. One foot of backfill covering the entire area will serve to match the surrounding area's topography.

7) Final Grading

Upon receipt of the certified clean backfill soil, final grading will be performed. The entire area will be graded with a convex topography.

8) Site Restoration

In order to minimize erosion in this area, seeding will be performed upon completion of the final grading. A perennial vegetative cover, specifically crown vetch, will be seeded. Nuodex personnel will inspect the area constantly to ensure an erosion preventing vegetative cover has grown. Re-seeding will be performed until the area supports a complete vegetative cover.

9) Equipment Decontamination

All equipment utilized in the dewatering, solidification, excavation and transport of the sludge will be cleaned and decontaminated in a self-contained, impermeable area. All equipment will be washed with a detergent such as Penetone 169, and rinsed with tap water. All water generated by this process will be collected and sampled. Analysis of this waste will be done as dictated by the MCUA for discharge to the MCUA sewage system. Should the MCUA not approve discharge to their system, the water will be drummed and disposed of at a licensed treatment, storage and disposal (TSD) facility.

10. Closure Certification

When closure of the sludge lagoon area has been completed as per the approved closure plan, Nuodex Inc. will submit to NJDEP, certification by both Nuodex Inc. and an independent New Jersey registered professional engineer that the facility has been closed in accordance with the specifications of the approved closure plan.

C. Post Closure Procedures

After the final closure certification by NJDEP Nuodex Inc. will monitor and maintain the lagoon area to insure its integrity. Monitoring of area will consist of periodic groundwater analysis and maintenance of the top cover area.

1) Groundwater Monitoring

Post closure groundwater monitoring of the area will be conducted utilizing the wells presently on site at the facility in accordance with the NJPDES discharge to groundwater permit (No. 0000116). The upper aquifer wells of interest are 21S,22S,B6S and 26. These wells are analyzed quarterly for the following parameters:

Ammonia-N pН Arsenic Phenols Barium Radium 226 Cadmium Radium 228 Chloride Selenium Hexavalent Chromium Silver Total Coliform Sodium Pesticides Special Conductance Fluoride Sulfate Total Dissolved Solids Gross Alpha Total Organic Carbon Gross Beta Iron Total Organic Halogen Lead Volatile Organics* Manganese 2,4-D 2.4.5-TP(Silvex) Mercury Nitrate-N

*Volatile organics by GC/MS is conducted on a semi annual basis.

Monitoring well locations are indicated in Figure 1. As required by state and federal regulations Nuodex Inc. is prepared to conduct the post closure groundwater monitoring program for thirty (30) years after closure of the settling lagoons.

Area Maintenance

On a quarterly basis the closed area will be inspected for completeness of vegetation cover and occurrence of erosion. Repairs will be executed immediately to vegetate sparse areas and complete any portion of eroded cover. As required by state and federal regulations Nuodex Inc. is prepared to continue maintenance practices on the closed area for thirty (30) years after closure certification of the settling lagoons.

D. Execution Schedule and Cost Estimate for Closure/ Post Closure Plan

The following closure/post closure plan of execution has been developed for the steps to stabilize, excavate and dispose of the settling lagoon material. The closure operations will begin as soon as possible after final approval of the plan by NJDEP. The NJDEP will be notified of changes in the closure plan schedule or operations if they arise during execution of the project.

Execution Schedule

Operation	Week
Site Preparation	1
Solidification of Sludge	2-4
Excavation and Removal	2-5
Transport and Disposal	2-5
Post Excavation Sampling and Analysis	5-7
Backfilling	8-9
Final Grading	9
Site Restoration	9
Equipment Decontamination	10
Closure Certification	11-12



RECEIVED PHS (BM)

SEP 0 4 1985

State of New Jersey DEPARTMENT OF ENVIRONMENTAL PROTECTION

M. Q. CEPRINI

DIVISION OF WASTE MANAGEMENT 32 E. Hanover St., CN 028, Trenton, N.J. 08625

DR. MARWAN M. SADAT, P.E. DIRECTOR

LINO F PEREIRA P.E. DEPUTY DIRECTOR

28 AUG 1985

Diane D. Buxbaum U.S.E.P.A., Region II Solid Waste Branch 26 Federal Plaza New York, New York 10278

RE: Nuodex Inc., Fords, Middlesex County, N.J. EPA ID NO. NJD 001 184 562

Dear Ms. Buxbaum:

Dr. Mario Q. Ceprini of the above referenced facility has on August 19, 1985 requested a written confirmation from this Bureau to you, at your recommendation, that the two settling lagoons under closure at Fords are not subject to RCRA regulations.

The Bureau of Hazardous Waste Planning and Classification on April 11, 1985 classified the settling lagoons sludges as non-hazardous industrial waste (I.D. 27) on the basis of specific representative waste stream sampling. Wastes conforming to I.D. 27 must be disposed at a facility authorized to accept industrial waste using an analytical protocol which will satisfy concerned parties that current regulations allow for such disposal. The lagoons are categorized as a non-RCRA IWMF activity.

Additionally, the Department's Division of Water Resources issued a NUPDES permit No. NJ 0000116 on 7/15/84. The permit requires a comprehensive water monitoring program and a closure plan for the two lagoons. The ground water monitoring program is intended to be in conformance with RCRA and NUPDES requirements under the purview of DWR, BCWDP. John Trela, Chief, of this Bureau can be contacted at (609) 292-0424 in the event there are questions relative to the lagoon closure.

Very truly yours

Frank Coolick Chief

Bureau of Hazardous Waste Engineering

EP5:1k

c: A. Chang, USEPA, Region II

J. Trela, NJDEP, DWR, BGWDP

A. McMahon, NUDEP, DWM, BISE

S. Schiffman, DWM, BHWPC

M. Ceprini, Nuodex

Attachment 2: Analysis of Sludge Material From Nuodex Inc. Fords Facility

Contents

- June 1984 Analysis for E.P. Toxicity Leachate Analysis of Sludge Material for Metals, Pesticides and Herbicides
- June 1984 Sludge Analyis of Sludge Material for Volatile Organics, COD, Oil and Grease, Total Phospate, Total Phenols, Sulfate, Arsenic, Barium, Cadimum, Chromium, Lead, Mercury, Selenium, Silver
- January 1983 E.P. Toxicity Leachate Analysis of Sludge Material for Metals, Pesticides and Herbicides Including Ingnitability, Corrosivity and Reactivity Testing.
- Additional requested results for benzyl chloride and pyridine.

June 1984 E.P. Toxicity Leachate Analysis of sludge material for metals, pesticides and herbicides

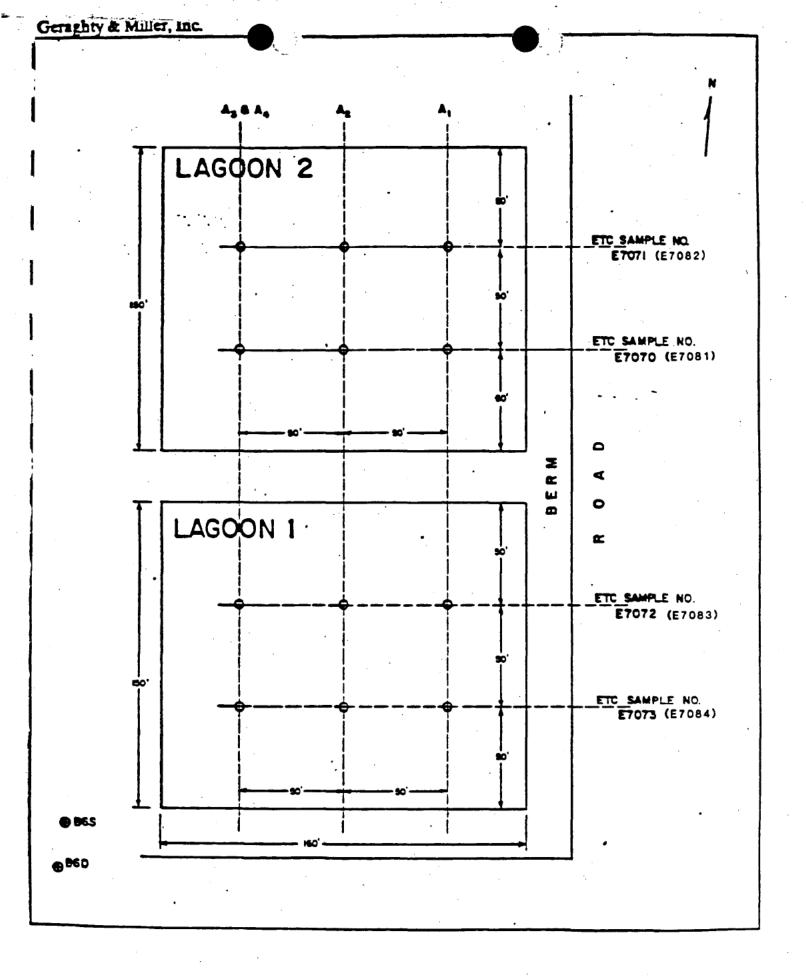


FIGURE 2 - SETTLING POND SLUDGE SAMPLES, JUNE 4, 1984, NUODEX, Inc., Fords, New Jersey.

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA RCRA EP Toxicity Contaminants (QR11)

Chain of C	ustody Data Required for ETC D	ata Management Summary	Reports the Average and the
	la wêlî re sanlandiya tovala		
E7081 NUODEX IN		JOFDRGI ILGNAREAL	the state of the s
ETC Sample No.	Company	Facility Sample Point	Date Time Hours

EPA		Milwin (V.	RCRA	QC Rep	licate	QC Blank	and Spiked	Blank	Jagari QC M	latrix Spik	•
Hazardous Wasto Number	Parämeter	Sample Concen. mg/1	Alert Level mg/l	First mg/l	Second mg/l	Blank Daja mg/1	Concen. Added	Recov	Unspiked Extract mg/I	Concon Added mg/I	Recuv
I linda	m um 1um ry 1um	<1.00 <5.00 <1.00 <1.00 <3.00E-03 <.20 <.02 <.40 <10 <10 <1.50	100 1 5 5 5 20 1 5 02 40 10 50	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	122 97 115 113 90 115	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	93 99 70 75 115 95

JUN 30, 1984

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA RCRA EP Toxicity Contaminants (QR11)

... Chain of Custody Data Required for ETC Data Management Summary Reports

E7082

NUODEX INC

MU0FDRG1

ILGNAREAL

840604

ETC Sample fo.

Company

Facility

Sample Point

Date

Elapsed

EPA		RCRA	. QC Rep	licate	QC Blank	and Spiked	Blank	QC M	atrix Spik	0
Hazardous Parameter Waste Number	Sample Concen. mg/l	Alert Level mg/l	First mg/l	Second mg/l	Blank Daja Mg/1	Concen. Added Mg/I	Recov	Unspiked Extract mg/I	Concen. Added mg/I	Rec
Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Endrin (GC) Lindane (GC) Methoxychlor (GC) Toxaphene (GC) 2.4-D 2.4-5-TP (Silvex)	<1.00 <5.00 <.20 <1.00 <1.00 <3.00E-03 <.30 <.20 <.40 <10 <.50 <10 <1.00	100 1 5 5 20 1 5 02 40 10 50 10	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	122 97 115 113 90 115	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	93 99 70 75 115 95
			÷							
						-				

JUN 30, 1984

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA RCRA EP Toxicity Contaminants (QR11)

Chain of Custody Data Required for ETC Data Management Summary Reports

E7083 NUODEX INC MUOFDRG1 ILGNAREA2 840604

ETC Sample No. Facility. Company

Elapsed' Simple Point Date Time

EPA	ngan deser	6004	QC Rep	licate	QC Blank	and Spiked	Blank	QC M	atrix Spik	e 💮
Hazardous Parameter Wasto Number	Sample Concen. mg/l	mg/l mg/l	First mg/l	Second mg/l	Blank Daja	Concon. Addrd	文 Recov	Unspikad Extract	Concen. Adden mg/I	Recov
Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Endrin (GC) Lindane (GC) Methoxychlor (GC) Toxaphene (GC) 2.4-D 2.4.5-TP (Silvex)	<1.00 <5.00 <20 <1.00 <1.00 <3.00E-03 <.30 <.20 <.40 <10 <10 <10 <10 <10	100 1 5 5 20 1 5 02 40 10 50	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	122 97 115 113 90 115	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	93 99 70 75 115 95
						·				199411

JUN 30, 1984

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA RCRA EP Toxicity Contaminants (QR11)

Chain of Custody Data Required for ETC Data Management Summary Reports

E7084 NUODEX INC NUOFDRG1 ILGNAREA2 840604

E16 dample No. Company Facility Sample Point Data Time Hours

EPA CASTALLA		000	QC Rep	licate:	QC Blank	and Spiked	Blank	- QC M	atrix Spik	10
Hazardous Parameter Wasto Number	Sample Concen. mg/l	RCRA Aleri Level mg/l	First mg/l	Second mg/l	Blank Rg/q	Concon. Added	X Recov	Unspikad Extract mg/I	Concon. (7.20
Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Endrin (GC) Lindane (GC) Methoxychlor (GC) Toxaphene (GC) 2.4-D 2.4-5-TP (Silvex)	<1.00 <5.00 <.20 <1.00 <1.00 <3.00E-03 <.20 <.02 <.40 <10 <10 <10 <1.50 <1.00	100 1 5 5 .20 1 5 .02 .40 10 10	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.1	122 97 115 113 90 115	<0.02 <0.4 <10 <0.5 <10 <1	0.04 0.016 0.2 1.0 0.1 0.01	#: C:
							-			
		•								

June 1984 analysis of sludge material for volatile organics and additional parameters

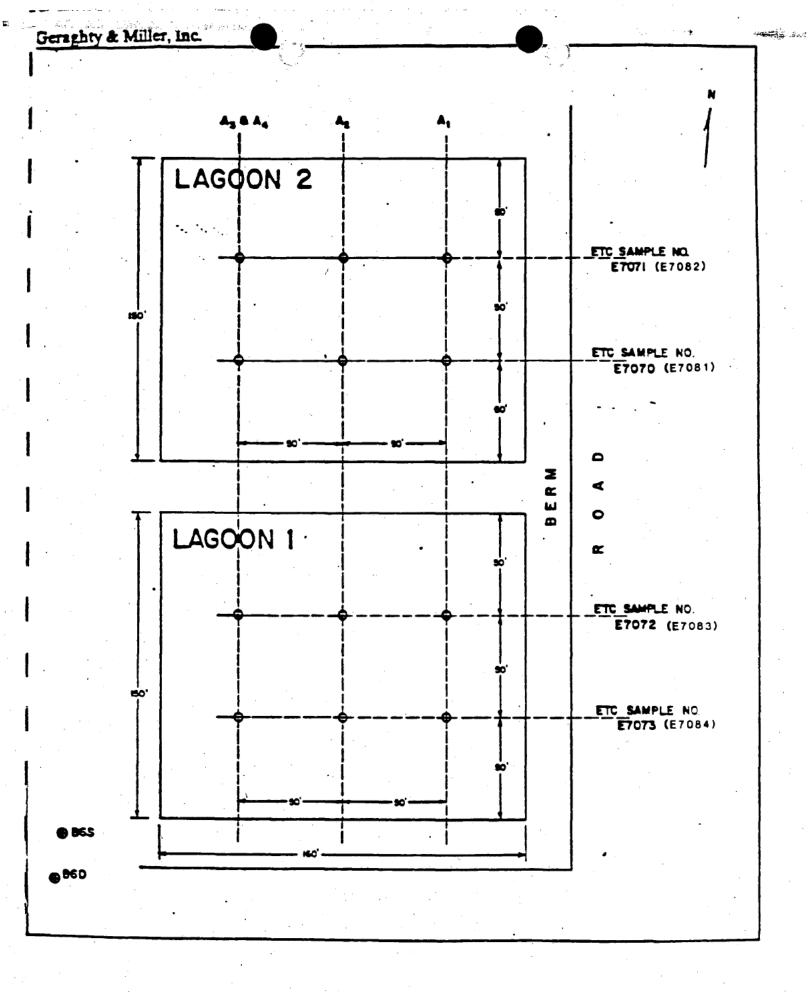


FIGURE 2 - SETTLING POND SLUDGE SAMPLES, JUNE 4, 1984, NUODEX, Inc., Fords, New Jersey.

TETTING AND CERTIFICATION

E-7070 Lajarn Sludge

DM-1H

History of each sample point showing parameters found at or above method detection limits:

 Q^{23}

DATA MANAGEMENT SUMMARY REPORT (DM-1H) - History of All Parameters Present, Selected Sample Point

July 16, 1984 Page 1

Chain of Custody Data Required for ETC Data Management Summary Report

ter toles ETC Sample No. NUODEX INC

Company

NUOFDRG1

LONAREAT

See Below

eg e e e e e e e e e e e e e e e e e e				Sample Points	, Sampling Dat	es, and ETC Sa	mple No.'s	ne a kirila malaye Malaye ay atai			
Parametoro	Unité	I LGNAREA1 840604 E7070	I LGNAREA1 840604 E7071								
PP Volatile Compounds					-				-,,		
Ethylbenzene Methylone chlorido Toluene	ug/l ug/l ug/l	BMDL BMDL 360000	111000 53800 581000								
Miscellaneous Parameters						}					
Arsenic Barium Chemical Oxygen Demand (COD) Chromium Lead Mercury	mg/kg mg/kg mg/kg mg/kg mg/kg	0.5 4 82000 90 19	1.6 10 120000 190 43								
Mercury Oil and Grease Phenolics, Total Phosphate, Total as P Selenium Sulfate as \$04	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.1 8500 24 89 BMDL 14000	0.2 9800 45 <10 1		:						
							· · ·	·			
									adis and a second		
,											
· ·									b .		

JUN 28, 1984

TABLE 1: QUANTITATIVE RESULTS RCRA METALS (QR13)

Chain of Custody Data Required for ETC Data Management Summary Reports

E7070 NUODEX INC NUOFDRGI ILGNAREAI 840604

ETC Sample No. Company Facility Sample Point Data Time Hours

EPA	A A A A A A A A A A A A A A A A A A A			Method	1. 1.		Maria .	tary and the		Ar. 22:
EPA Hazardous Waste Number	Pärame		Sample Concen mg/kg	Method Detect Limit mg/kg					7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	and the second
Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver		•	.50 4.00 ND 90 19 .10 BMDL BMDL	.50 .50 .50 2 8 .10 .50		-	•			
	• .				•		.:	-		
							,			

-ETC TESTING and CEN

E-7071 Legon Shalpe

PM-1H

History of each sample point showing parameters found at or above method detection limits.

DATA MANAGEMENT SUMMARY REPORT (DM-1H) - History of All Parameters Present, Selected Sample Point

July 16, 1984 Page 1

Chain of Custody Data Required for ETC Data Management Summary Report

ETC Sample No.

NUODEX INC

Company

NUOFDRG1 Facility

LONAREAT

Sample Point 🛒

Date

				Sample Points	, Sampling Dat	es, and ETC Sa	mpie No.'s	Ána, garagrada	
Parametera	Unite	1 LGNAREA1 840604 E7070	I LGNAREA1 840604 E7071						
PP Volatile Compounds Ethylbenzene Methylene chloride Toluene Miscellaneous Parameters	ug/1 ug/1 ug/1	8MDL 8MDL 360000	111000 53800 581000	•					
Arsenic Barium Chemical Oxygen Demand (COD) Chromium Lead Mercury Oil and Grease Phenolics, Total Phosphate, Total as P Selenium Sulfate as SO4	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.5 4 82000 90 19 0.1 8500 24 89 BMDL 14000	1.6 120000 190 43 0.2 9800 45 <10						
									in the second se
									*

JUN 28, 1984

TABLE 1: QUANTITATIVE RESULTS RCRA METALS (QR13)

Chain of Custody Data Required for ETC Data Management Summary Reports

E7071 NUODEX INC NUOFDRG1 ILGNAREA1 840604

E1C Sample No. Company Facility Sample Point Data Time Hours

L.	ETC Soole Ho;	· · · · · · · · · · · · · · · · · · ·	Campony	 Facility	Sample Pol	nt Data	Time Hou	75	(
EPA			Method						
EPA Hazardous Paramete Waste Number		Sample Concen. mg/kg	Detect Limit mg/kg				V VV		
Arsenic Barium Cadmium Chromium Lead Morcury Selenium Silver		1.60 10 ND 190 43 .20 1.00 BMDL	.50 .50 .50 2 8 .10 .50	•	-				
	•	•							
	-								11
						·			

THE SECTION AND CERTIFICATION

E7072 • Jagon Shelge

 PM-1H.
 History of each sample point showing parameters found at or above method detection limit; ETC ENVIRONMENTAL TESTING and CERTIFICATION

DATA MANAGEMENT SUMMARY REPORT (DM-1H) - History of All Parameters Present, Selected Sample Point

July 16, 191 Page 1

Chain of Custody Data Required for ETC Data Management Summary Report

See Scien NJODEX INC NJOTURGI LCHAREA2 ... See Sales

ETC Sample No. Company Facility Sample Point Date

	wanan lan	any, a sasta a sito a	Sample Points	. Sampling Dat	ee, and ETC 84	Sample No:4			
Ps/amelerb	1 LGNA1 84060 E707	REA2 I LGNAREA2 04 840604 2 E7073							
PP Volatile Compounds		1		١ .					
[Ethylbenzene	99/1 57000 99/1 BHOL 99/1 561000	BMDL 124000 721000							
Miscellaneous Parameters	·.]				· ·	·			
Barium Chemical Oxygen Demand (COD) Chromium Lead	ng/kg 1 ng/kg 3 ng/kg 120000 ng/kg 160 ng/kg 26 ng/kg 0	3.2 · 6 · 200000 · 260 · 42							
Oil and rease Phenol: Total Phosphate, Total as P Selenium	ng/kg ng/kg ng/kg ng/kg ng/kg ng/kg 14000	43000 120 410 0.31 13000							
	ĺ						7-		
	·								
			,						

JUN 28, 1984

TABLE 1: QUANTITATIVE RESULTS RCRA METALS (QR13)

Chain of Custody Data Required for ETC Data Management Summary Reports

E7072 NUODEX INC NUOFDRGI ILGNAREA2 840604 Elepted tro Sample No. Company Facility Sample Point Date Fine Mours

tPA Landing Shield Executive Nations		n. Paga	Mathad								
EPA Hazardous Waste Number	Parameter	Sample Detect Concen. Limit mg/kg mg/k									
Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver		1.00 3.00 ND 160 26 20 1.00 BMDL	.50 .50 .50 2 8 .10 .50			•			•		
					·						Andrews Andrews

FTE TESTING and CERTIFICATION

- E-7073 Lagon Sleege

event

.

PM-1H:
History of each sample point showing parameters found at or above method detection limits.

Q32

ETC ENVIRONMENTAL TESTING and CERTIFICATION

DATA MANAGEMENT SUMMARY REPORT (DM-1H) - History of All Parameters Present, Selected Sample Point

July 16, 1984 Page 1

Chain of Custody Data Required for ETC Data Management Summary Report

See Below

NUODEX INC

NUOFDRGI

LONAREA1

See Beles

ETC Sample No.

Company

Facility

Sample Point

Dete

Service Company of th			Sample Points	, Sampling Dat	es, and ETC Sa	mple No.'e	váce dy paktorie	
Parametero Unito	I LGNAREA1 840604 E7070	I LGNAREA1 840604 E7071						
PP Volatile Compounds Ethylbenzene ug/1	BHDL	111000					·	Same.
	8MDL 360000	53800 581000	in in the second					
Miscellaneous Parameters Arsenic mg/kg Barium mg/kg	0.5	1.6						
Chemical Oxygon Demand (COD) mg/kg Chromium mg/kg Lead mg/kg Mercury mg/kg Oil and Grease mg/kg	82000 90 19 0.1 8500	120000 190 43 0:2 9800				34 : 1		
Phenolics, Total mg/kg Phosphate, Total as P mg/kg Selenium mg/kg Sulfate as SO4 mg/kg	24 89 BMDL 14000	45 (10 1 14000						
					•			e en
523	·					•		

JUN 28, 1984

TABLE 1: QUANTITATIVE RESULTS RCRA METALS (QR13)

Cha	in of Custody Data Req	uired for ETC Data Manag	gement Summary Repor	rts (g. digital) (d. 1990) (g. 1
E7073 NUOC	DEX INC		ILGNAREA2 840	
EIC Simple No.	Company	Facility	Sample Point Dat	• Time Hours

EPA of Nongering Windows for an analysis Argentine	Sample Method Detect Concen, Limit mg/kg mg/kg		·		er en literatur				
EPA Hazardous Wasto Number									
Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	3.20 6.00 ND 260 42 1.00 .31	.50 .50 .50 2 8 .50 .10							
							•.		
	·						•	·	
			·						

NUODEX INC .
FORDS, NEW JERSEY

GENERAL INFORMATION & SITE EVALUATION SUBMISSIONS FOR THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APRIL 25, 1985

VOLUME 4 LANDFILL/SLUDGE LAGOON AND OFF-SITE CONTAMINATION DATA



165 Fieldcrest Ave • CN 7809 • Edison, New Jersey 08818-7809 • (201) 225-2000

LANDFILL SLUDGE LAGOON

DESCRIPTION AND DATA SUMMARY FOR LAGOON SLUDGES AND DISPOSAL AREA SOILS 1984

L

SETTLING LAGOONS

Description of the Settling Lagoons

The two settling lagoons are situated adjacent to a neutralization plant. From the two settling lagoons received neutralized program effluent from this treatment plant. Sludge disposal ceased in 1973 and the lagoons have remained inactive from 1974 to the present. From 1974 1983 the lagoons functioned as a connecting link between the outfall line from the neutralizer and the MCUA (Middlesex County Utility Authority) sewer system. On January 19, 1983 a direct pipe was installed from the neutralizer to the MCUA, bypassing the lagoons.

Each lagoon is 160 feet long, 150 feet wide, and 3 feet deep and the image is the i

Based on the results of these analyses, the sludge has been classified as industrial waste ID-27 (non-hazardous) by the Bureau of Hazardous Waste Planning and Classification of NJDEP. A copy of the letter of classification is included as Appendix C.

SLUDGE DISPOSAL AREA

Description of the Sludge Disposal Area

Figure 1 shows the sludge disposal area which is approximately 12 acres in size and is located in the southern half of the Nuodex Inc. property. The sludge disposal area was created by periodically removing sludge from the settling lagoons when they were full and depositing it in this area. This practice ceased in 1973.

Composited sludge samples were collected in June 1984 and sent to ETC for EP toxicity, ignitability, corrosivity, reactivity, and VOC analysis (refer to Figure 3 and Table 1). Based on the results of these analyses, the sludge has been classified as industrial waste ID-27 (non-hazardous) by the Bureau of Hazardous Waste Planning and Classification of the NJDEP (see Appendix C).

Based on the ID-27 classification of the contents and because ground-water monitoring downgradient of the sludge disposal area (see data from wells B4, B19, and B20 in Table 2) indicates that the sludge has had virtually no impact on the groundwater downgradient of it, the following closure and post-closure plan is submitted.

RESULTS

Metal objects were detected throughout the three (3) landfills. In many instances the distinct dimensions of the buried objects could be determined. Some grid transects surveyed exhibited ill-defined areas of metal contents, possibly due to a considerable amount of reinforcing rods and/or steel slag in the fill material.

Landfill Ll

Drums and visible wastes were observed at various locations at Landfill L1. A considerable amount of subsurface metal objects were detected, many exhibiting apparent dimensions of drums. Approximately twenty two (22) distinct, well-defined areas of detection were recorded on Landfill L1. Approximately seven (7) areas of detection less well-defined and of greater dimensions were also recorded. Figure #2, Metal Detection Survey Map, Landfill L1, details the location of the anomolies.

Landfill L2

Six distinct areas of subsurface metals were detected on Landfill L2. In addition, an ill-defined area littered with subsurface ferrous metals exists on the northeast



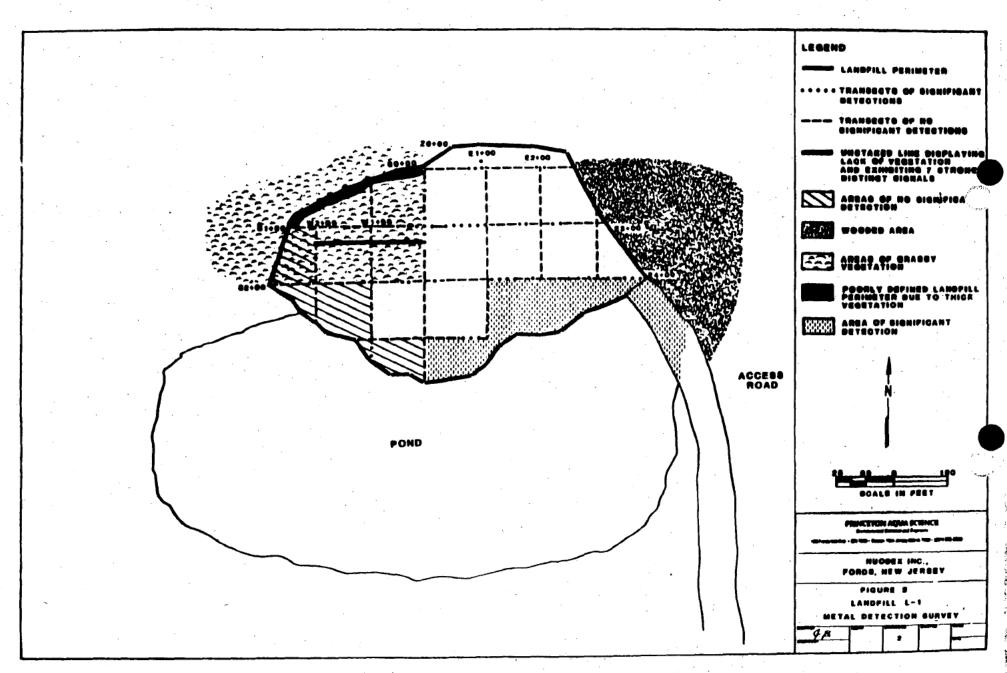
portion of the fill. Figure #3 Metal Detection Survey Map, Landfill L2, details the location of the metal objects.

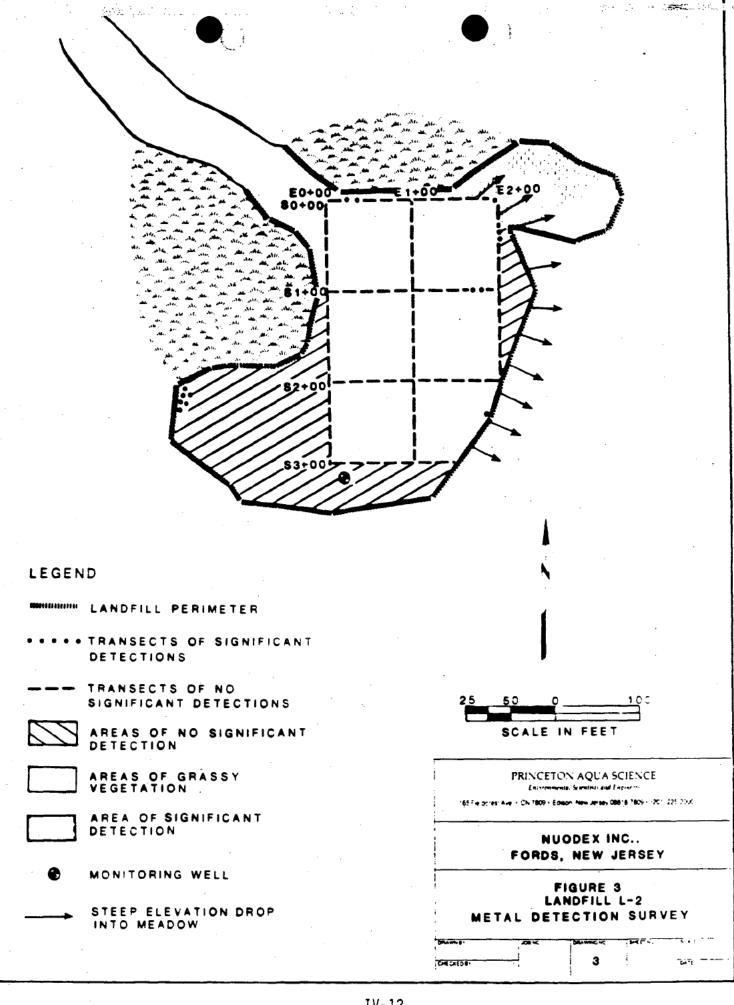
Landfill L3

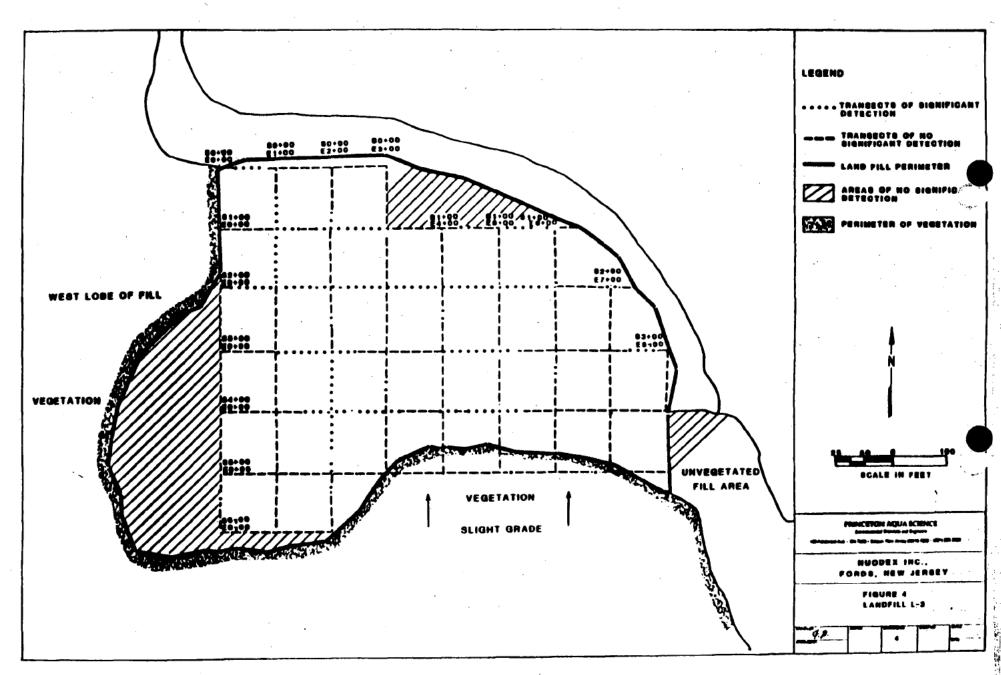
Subsurface metal objects were detected throughout the 12 acre landfill. Areas of detection range from poorly defined transects of five hundred fifty (550) feet (Line S2+00) to smaller, well defined anomolies of five (5) feet in length or less (Line E2+00, S5+25). Figure #4, Metal Detection Survey Map, Landfill L3 provides a detailed illustration.

CONCLUSIONS

Subsurface metal objects were detected throughout the three (3) landfills, as indicated by Figures #2-4. Various metal objects, including drums, were also visually observed at the surface of the three (3) landfills.









CLOSURE PLAN
HAZARDOUS DRUM STORAGE BUILDING
NUODEX, INC.
INDUSTRIAL AVENUE
FORDS, NEW JERSEY
FINAL DRAFT

PRINCETON AQUA SCIENCE

SEPTEMBER 9, 1985

165 Fieldcrest Ave. • CN 7809 • Edison, New Jersey 08818-7809 • (201) 225-2000

INTRODUCTION

This closure plan has been prepared for the Hazardous Material/Waste Drum Storage Building at the Nuodex Inc., facility located in Fords, New Jersey. Nuodex has manufactured chemicals at this site since its aquisition in December, 1982.

As required by the Resource Conservation and Recovery Act (RCRA), cessation of operations at a storage facility necessitates implementation of an approved closure plan. Nuodex has terminated chemical manufacturing operations at the Fords facility and has contracted Princeton Aqua Science (PAS) to prepare a closure plan for the aforementioned drum storage building. This plan has been prepared in accordance with N.J.A.C. 7:26-9.8 and includes a sampling and anlaysis plan.

Closure Plan Hazardous Drum Storage Building Nuodex Inc. Fords, New Jersey

Table of Contents

	Page
Introduction	i
Table of Contents	ii
A. Description of Hazardous Drum Storage Building	1
B. Description of Closure Procedures	2
C. Closure Schedule	3
D. Closure Certification	4
E. Closure Plan Cost Estimate	5
Attachments	•
Attachment A - Sampling and Analysis Plan	A 1-8
Attachment B - Verification that PAS is a Certified Lab	B 1-9
Attachment C - Copy of Chain of Custody Form	C -1
Maps	
Figure 1 - General Site Map	
Figure 2 - Hazardous Drum Storage	

A. Description of Hazardous Drum Storage Building

The Hazardous Drum Storage Building (Bldg. #60) is located near the western boundary of the northwest quadrant. This building consists of a six inch (6") reinforced concrete slab resting on concrete pillars. The pillars serve to elevate the slab approximately four to five feet (4'-5') above grade. The slab has four foot (4') sections of portable concrete curbing (parking lot stops) placed around its perimeter to prevent drums from being accidently pushed over the side. The entire area is covered by a fiberglass roof supported by columns. The building does not have sidewalks or floor drains.

On the east side of the building exists a small room utilized for hazardous material transfer operations. Finished product (toxaphene) was pumped to this room, via above ground piping, from three (3) nearby storage tanks. Fifty-five (55) and thirty (30) gallon drums were filled with the product and stored on the cement slab to await shipment.

In addition to the toxaphene, other organic compounds (finished product/waste) such as, tris-2-butoxyethyl phosphate, tris-2-ethylhexyl phosphate and diphenyl decyl phosphite, were stored at building #60 to await shipment. Storage could exceed ninety (90) days as Nuodex was a licenced treatment, storage and disposal (TSD) facility.

B. Description of Closure Procedures

The following procedures for closure of the Hazardous Drum Storage Building (Building #60) will be implemented by Nuodex Inc. upon approval of this plan by the NJDEP. The following procedures are to be performed by an experienced environmental contractor who will provide all labor, equipment and supplies necessary to properly complete the approved closure plan.

- 1) Prior to initiation of any cleaning and decontamination procedures, all drums still remaining on-site will be disposed of in accordance with applicable NJDEP regulations. Manifests will be prepared, distributed and returned to Nuodex in accordance with NJAC 7:26-7.4.
- 2) Building 60 is an opened wall warehouse and precipitation can enter the drum storage area during extreme rainfall. Since precipitation can enter the building, it is assumed that there are no significant levels of existing contamination on the concrete and the existing small room. Therefore scrubbing with a detergent mixture, followed by a rinsing is proposed as a sufficient method of decontaminating the building. The scrubbing will be accomplished by using a power jet machine. Prior to scrubbing an absorbent boom will be placed along the perimeter of the concrete slab to prevent runoff. The work will begin at the perimeter and move inward. Due to this method, all waste generated from this process will be transported toward the of the slab. The waste will be collected with an industrial vacuum and then transferred into a 55 gallon drum and disposed of in accordance with applicable NJDEP regulations. The rinsing procedures will be accomplished in the same manner.
- 3) The soil around the building will be sampled and analyzed by Princeton Aqua Science (PAS). A detailed Sampling and Analysis Plan is provided as Attachment A of this document.

Nuodex Inc. Fords, New Jersey, Facility

Table of Contents

	Page
Introduction	
Table of Contents	A-1
A. Sampling Locations	A-2
B. Sampling Methods and Analysis	A-4
C. Report	A-7
<u>List of Tables</u>	
Table 1 - Sampling Summary	A-3
Table 2 - Laboratory Sample Analysis	A-5
Table 3 - Sample Analysis by Location	A-6
Table 4 - Estimated Costs	A-8
Maps	
Figure 1 - General Site Map	Pocket
Figure 2 - Hazardous Drum Storage End of D Building Sampling Locations	Ocument

A. Sampling Locations

Soil sampling will be executed in the area around the hazardous drum storage building. After technical review, it has been determined that samples will be collected from the eastern and southern sides of the building. Four (4) soil borings will be completed at equidistant points on each of these sides. In addition, two (2) background samples will be collected at the site.

Sampling locations are shown on Figure 2 - Hazardous Drum Storage Building Sampling Locations.

Eastern side - Locations "E1-4"

Boring El through E4 will be hand augered to a depth of two (2) feet in six (6) inch increments. The 0-6 inch increments from Borings El and E2 will be composited and analyzed for E.P. Toxicity, Reactivity (Cyanide and Sulfide), Priority Pollutants +40 less the volatile organic fraction. The 18-24 inch increments from El and E2 will be composited and analyzed for volatile organics. The 0-6 inch and 18-24 inch increments from E3 and E4 will be sampled and analyzed in the same manner.

The 18-24" increment is reserved for volatile organic analysis because it is assumed by the NJDEP that a loss of volatile material can occur in the 0-6 inch layer of soil. Therefore all analysis for volatile organics will be performed on the 18-24 inch increments.

Southern side - Locations "S1-4"

Borings S1 through S4 will be sampled and analyzed in the same manner as borings E1 through E4.

Background - Locations "B1 and B2"

Boring Bl will be located on the west side of the building and boring B2 will be located at the northwest corner of the property. These sampling points have been selected to provide information on background soil contaminant levels.

The borings will be completed to a depth of two (2) feet in six (6) inch increments. The 0-6" increment from each boring will be analyzed for Reactivity (Cyanide and Sulfide), E.P. Toxicity and Priority Pollutants +40 less volatile organic scan. The 18-24" increments from each boring will be analyzed for volatile organics.

Table 1

Nuodex Inc. Fords, New Jersey

Sampling Summary

Sampling Location	Depth of Coring (inches)	Sampling Increments (inches)	Sample for Analysis
S1 - S2	24	0-6; 18-24	S1 and S2 0-6" comp. and 18-24" comp.
S3 - S4	24	0-6; 18-24	S3 and S4 0-6" comp. and 18-24" comp.
E1 - E2	24	0-6; 18-24	El and E2 0-6" comp. and 18-24" comp.
E3 - E4	24	0-6; 18-24	E3 and E4 0-6" comp. and 18-24" comp.
Bl	24	0-6; 18-24"	0-6" and 18-24"
B2	24	0-6; 18-24"	0-6" and 18-24"

Table 3

Nuodex Inc. Fords, New Jersey

Sample Analysis By Location

Sampling	J. Location	Analytical Parameter
S1 & S2	0-6" comp.	E.P. Toxicity, Reactivity (Cyanide & Sulfide) and USEPA Priority Pollutants +40 less volatile organics.
S1 & S2	18-24" comp.	Volatile organics.
S3 & S4	0-6" comp.	E.P. Toxicity, Reactivity (Cyanide & Sulfide) and USEPA Priority Pollutants +40 less volatile organics.
S3 & S4	18-24"comp.	Volatile organics.
E1 & E2	0-6" comp.	E.P. Toxicity, Reactivity (Cyanide & Sulfide) and USEPA Priority Pollutants +40 less volatile organics.
E1 & E2	18-24" comp.	Volatile organics.
E3 & E4	0-6" comp.	E.P. Toxicity, Reactivity (Cyanide & Sulfide) and USEPA Priority Pollutants +40 less volatile organics.
E3 & E4	18-24" comp.	Volatile organics.
Bl	0-6"	E.P. Toxicity, Reactivity (Cyanide & Sulfide) and USEPA Priority Pollutants +40 less volatile organics.
B1	18-24"	Volatile organics +10
B2	0-6"	E.P. Toxicity, Reactivity (Cyanide & Sulfide) and USEPA Priority Pollutants +40 less volatile organics.
B2	18-24"	Volatile organics +10

ATTACHMENT B

VERIFICATION THAT PAS IS A CERTIFIED LAB

IT' E' N' Ja Is'



DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certifies That

PRINCETON AQUA SCIENCE 789 Jersey Avenue New Brunswick NJ 08902

having duly met the requirements of the

Regulations Governing Laboratory Certification

And Standards Of Performance N.J.A.C. 7:18 et. seq.

is hereby approved as a

State Certified Water Laboratory

To perform the analyses as indicated on the Annual Certified Parameter List which must accompany this certificate to be valid

12064
PERMANENT CERTIFICATION NUMBER

November 22, 1982

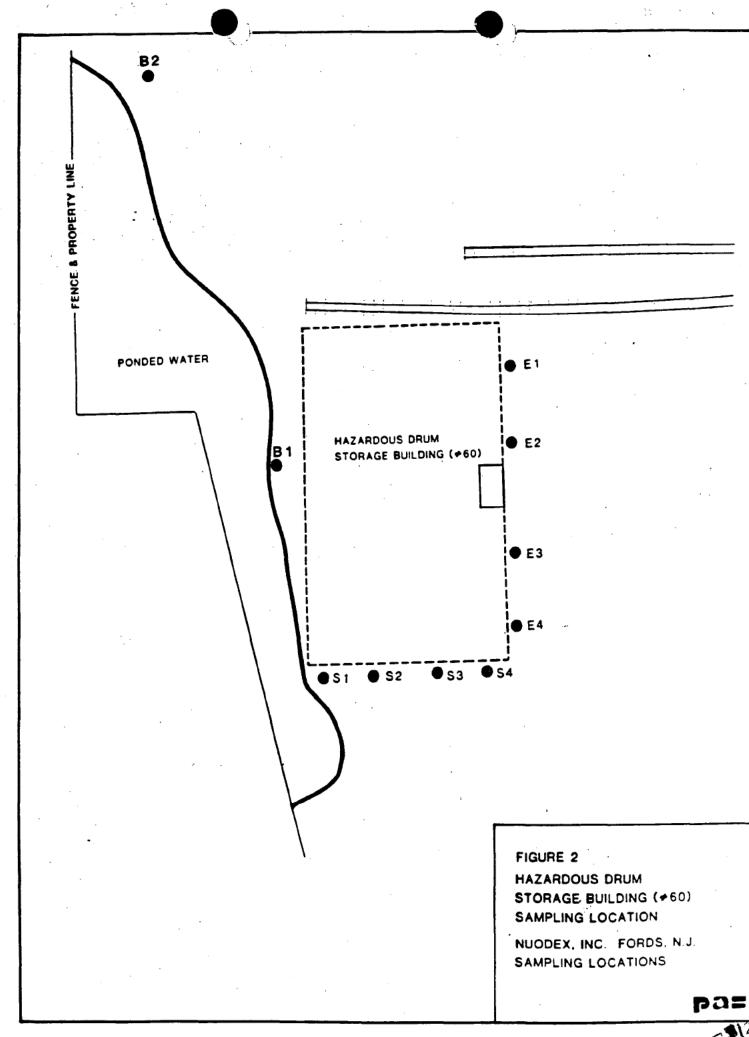


COMMISSIONE DEPARTMENT OF ENVIRONMENTAL PROJECTION

This certification is subject to unannounced laboratory inspections as specified by N.J.A.C. 7:18-2.11(d) and agreed to by the Laboratory Manager on filing the application



Lets ... lect 'eat ...





O George Tyler	· · · · · · · · · · · · · · · · · · ·		<u> </u>	
			**	
FROM Walter Olenick		DATE	3/5/79	_

JBJECT Tenneco Chemicals - Meadow Road, Fords, (Woodbridge), NJ

Date of Investigation: February 28, 1979

Purpose: Review Maleic Anhydride Operation

Persons Interviewed: Kenneth J. Buck - Plant Manager

John J. Mahon - Technical Superintendent

Investigation by: Carl Ochs & Walter Olenick NJDEP

Manufacture:

A. Main Benzene Storage - 250,000 gallon capacity

The storage tank is surrounded by a dike which contained water from melted snow. It was not possible to check the vent, which was said to be a Vareg separator flame arrestor. The storage tank is filled from tank trucks or tank cars.

B. Benzene Day Tank Storage - 8,600 gallon capacity

Benzene is pumped from the main benzene storage tank at the rate of one or more times per shift. Mr. Mahon would not indicate the amount being pumped per shift nor indicate the amount transferred. The tank is equipped with a Vareg 6" separator flame arrestor. Strong odors were noted from the vent while on the top of the tank.

The tank is heated to prevent freezing (Freezing point is 5.53°C). Temperature of the benzene was noted to be 32°C, which is far in excess of that needed to prevent freezing. Mr. Mahon stated that it was not necessary to paint the tank white since under 7:27-16.2 F-2, the tank is maintained under a controlled elevated temperature. Heating of the contents of the Day Storage Tank to 32°C appears to place this equipment in the category of process equipment which would eliminate the necessity for painting the tank white. As process equipment, it would appear necessary for the subject company to provide controls to reduce emissions from the vent. At the outside of the concrete dike surrounding the Day Tank, considerable leakage of benzene was noted from the shaft of a transfer pump to the reactors. A collection of solidified benzene which reached upward approximately 12" to the shaft seal was noted. Benzene is continuously pumped to 2 parallel reactors.

C. Reactors - 2 in parallel

The reactors are jacketed and use a molten salt bath of sodium nitrite/potassium nitrite for the heat exchanger. The reaction is exothermic and is maintained at 330°C by jacket cooling. The reaction was said by Mr. Mahon to exhaust 4% unreacted benzene.

Benzene is continuously pumped through a nozzle where it impinges on a stream of compressed air meeting at right angles to the flow of benzene in a mixing chamber. The atomized benzene passes into the bottom of a fluidized bed of vanadium pentoxide catalyst. The gaseous product is discharged through a heat exchanger.

Reaction is exothermic and is cooled via the molten salt bath. The heat exchanger cools the molten salt and generates useful steam at 15-17 psi.

D. Crude Maleic Anhydride

The gas stream cooled in the heat exchangers passes to a condenser-cooler which collects approximately 50% of the crude molten maleic anhydride and is pumped continuously to a crude maleic anhydride storage tank. Overhead gases from the condenser-cooler are ducted to a scrubber using water as the scrubbing media. Maleic anhydride in the gas stream is hydrolyzed to maleic acid by contact with the scrubber water and is continuously fed to the converter.

E. Converter (dehydrator-refiner) Still

The equipment is essentially a distillation unit in which the aqueous maleic acid is heated with xylene in order to azeotrope off the water. The azeotroped water and xylene pass to a xylene separator tank from which the separated xylene returns to the still. After sufficient maleic acid has accumulated in the converter, the remainder of the molecular bound water is dehydrated and crude maleic anhydride is run in from the storage tank. The batch is then distilled, with the forerun recycled back to process. Maleic anhydride is distilled and pumped to storage from which it is shipped as the molten material or briquetted.

The still bottoms are removed by dissolving or mixing with water and is pumped to the Middlesex County sewer.

F. Xylene Separator Tank

The storage tank collects azeotroped water/xylene. Xylene is returned to the still in paragraph (E). The tank is surrounded by a concrete wall, the bottom of which was severely corroded by contact with maleic acid. In addition the walled enclosure has a gravel bed base which was covered to a depth of 6-10" of maleic acid. Both the condition of the concrete wall and the accumulation of maleic acid indicates substantial leakage. At one corner of the enclosure a sump pit, approximately 18"x18" was used to drain the enclosure by means of a steam jet aspirator. The drainage is directed to the Middlesex County sewer.

incisons sectors in the transplant is the transplant in the sector in th

Discussion:

statement that the Benzene Day Tank is filled one or more times/shift. Since the tank capacity is rated at 8,600 gallons, it is assumed that at least 7,000 gallons of benzene is consumed/shift in the two parallel reactors. At 7.3 #/gallon, this would approximate a minimum of 51,000# total, or slightly in excess of 6,000 #/hr. for the two reactors.

I suggested to Mr. Mahon that the rate of benzene addition would be at least 3,000 #/hr. for a reactor. He countered by stating that the rate would be based on the catalyst activity, and that it would be necessary to increase the reaction temperature in order to maintain a continuous product removal. Mr. Mahon also agreed, on further questioning, that it was necessary to analyse the gas stream entering and exiting the reactors to determine the catalyst activity. According to an initial statement of a 4% unreacted benzene in the exit steam, this unreacted benzene would exit from the scrubber stack uncontrolled.

On the basis of the estimated 6,000 #/hr., the benzene emission from the scrubber would represent a minimum of 240 #/hr.

Additional benzene emissions can be anticipated from the Benzene Day Tank vent, which is the subject of a chapter 16 violation under 7:27-16.2(a), in spite of paragraph (f)-2 which would, under ordinary conditions be an acceptable exemption. It is the considered opinion of the writer that maintaining the temperature of the benzene in this storage tank at the observed 32°C is far in excess of that required to prevent freezing. The tank is in fact, part of the process line and should include controls to reduce emission of benzene.

Walter Olenick, Supervisor

Central Field Office

Cr. Environmental Specialist



State of Rem Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625

MEMORANDUM

February 25, 1985

TO:

Ernest A. Mancini

FROM:

Allan T. Edwards

SUBJECT:

Nuodex Inc.

A review of the field reports for the December 3, 1984 incident at wodex indicates that no subchapter 5 action should be taken against Nuodex Inc. The release of phosphorus oxycloride was brief and was controlled within minutes. Nuodex notified downwind companies of the incident immediately so that no one was affected by the incident. The DEQ-012 dated December 6, 1984 will not be processed.

A subchapter 8 violation was processed against Borg Warner the actual owner of the tank. All enforcement action will be taken against Borg Warner for this incident.

A. T. E.

đs

c: B. Sullivan

R. Hills

AIR POLLUTION CONTROL CODE FIELD RECORD OF VIOLATION

2.00			•	
PANT	-	_	~	
~ /// -	_	-~	- 4	
1//0.7	, ,	. ,	_	S
6/////		,		
		_	_,	•
	1 .	·	• ,	_

DATE 12/6/84 TIME AT SITE 10:30 mm /1:00 mm.

STAT	TE HEALTH DISTRICT CENTRAL	COUNTY MIDDLESEX
Sec. A	FULL BUSINESS NAME NUODEX, INC.	
4.7		Fords 08863
	TYPE OF OWNERSHIP: Individual Partnership Corp	oration Municipal Zip Code
	NAME OF OWNER, PARTNERS, OFFICERS, OFFICIALS	Туре
zZ		
ATIC	TITLE	
PERS /IOL	PERSONS INTERVIEWED VOHN MAHON, PL	ANT MANAGER
	I LENGON ACTIONIED TO NECESTAL INCOME.	MAHON
	MAILING ADDRESS MEADOW RD. Street	FORDS 0886 3
- ()	REMARKS: (201) 738 -4082	
Sec. B	LOCATION ADDRESS MEADOW RD:	FORDS City
ON	(Show details on reverse side) Book Plate	Lot 100 Block 93
LATI	PREMISES OCCUPIED AS: Owner Lessee	15. [197] (1. [188] 22 (1. [198] 23 [28] 25 [28] 25 [28] 25 [28] 25 [28] 25 [28] 26 [28] 26 [28] 26 [28] 26 [28] 27 [28] 27 [28] 27 [28] 27 [28] 28
VIO	OWNER NUODEX, INC., P.O. BOX 365, TUR	NER PL , DISCATAWAY 0885
Sec. C	CODE REFERENCE: Chapter(s) Section(s)	27 Paragraph(s) 5.2(a)
,	DETAILS INVESTIGATION DISCLOSED THE	- I was a second of the second
	OUTDOOR ATMOSPHERE OF = IOLBS.	
	FROM TANK 2K (P/C1# 008778) ON	12/3/84. RELEASE RE-
	SULTED IN EVACUATION OF EMPLE 8 SHEPHING-WILLIAMS	NEED FROM BOTH NUOVE
LS O	4 SHEKWIN - WILLIAMS	新加州·西州 (1984年) 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年 1886年
TAI		的是这些的。""我是我们 我更为 的女
ā	REMARKS PHOSPHORUS OXYCHIORIDE REL	EASE WAS NOT CONFIRMED
	REPORTED BY NUODEX REPRESENTATION	The second of th
-	Kelesse Coursed on 12 13/44 2 10	7 0
	RECOMMENDED ACTION XEVIEW FOR ADMINISTA	PATINE ACTION CONCERNING
	VICLATION OF 5-5.2(a) AS NEW AS FAILU	RE TO REPORT RELEASE.
	Jy . 1 62 1/3/85	
SIGN	ED Moria de Maria 4 TITLE:	Insputer
. :	그는 🖊 시간들은 그런 그는 그는 그들은 그를 그린 그는 그들은 그를 🛫 🕳 🖊 그는 그를 가입했다. 전략을 가입하면 생각했다.	/ Amounts formative

3

ERV 04884 COMPLAINT # VODEX DATE_ TIME_ CHAPTER REF. MULTIPLE SINGLE PLAN1 MGR CLIMATIC CONDITION: ☐Clear
☐ Rain وون □ Snow Title EPREMISES ENTERED / TIME IN 10:30 (a.m.) OUT /1:00 (a.m.) __ TEMP. __ WIND: Vel. ___ Entered Sherwing - Williams at 10:05 A.M on **OBSERVATIONS** of a vapor cloud nuodex called the vapor as shough 70 BORG-WARNER PROCESSED FOR VESTIGATED BY: actor **FURTHER ACTION** APPROVED BY: signed Super. RELEIT EKO 12.15 74 ISTED BY:

sirmod

Entered. Mindey at 10:30 p.m. & spoke with John Maron. , Plant manager - Verified the Terme and the cloud Birection of the incident He said that the leak was less than one gallon, approximately 10 lbs. It happened as they were pumping the prosphorus opphoride to a tank truck when the flunge in the transfer line leaked. Recording to Mr. Maron this was their last load that they were returning to the vendor because they no longer are producing prosphate esters, such as trioctyl prosphate.

such as trioctiff phosphate.

Was reported only to their Environmental Manager on the bases that they thought it did not go off their property line. Made Mr. Makon aware that the cloud was seen aff their property and larger than he had

described

No one, was next at Newderf. They have one, incident where a person who was the seene of the leak, reported coughing list might 4 is being xent to the doctor.

12/7/84 3:35-3:40 P.M.

Was tald by Mario Ceprini - Mgk. of Env. (Affair, of Muddey (981-5255) that the 1-2 galiens of PCLO3 was plushed immediately into the sice in time to the sice of the fore being dumped into the country rever line. In which words, they took quied measures to correct the problem. He febriher explained touch bong

SOURCE Juciley			COMPLAINT #	<u>FI#</u>
LOCATION		olima	DATETIME	p,m
No. Street	Municip	Dailty	CHAPTER REF □SINGLE □MU	
MAILING ADDRESS			<u></u>	
PERSON(S) INTERVIEWED	·	Title	CLIMATIC CONDIT	□Fog
	à m	Title a.m.	WIND: Vel.	TEMP.
□PREMISES ENTERED / TIME IN SPEC	p.m. OUT	p.m.	Dir	
OBSERVATIONS Wainer	Rah que	ulaxeo	Loote the	tack
and its contests	and the	A Nue	ley was e	motying
out the contests	40 that	both 1	he tank	and
it contexts could	be trans	sorted.	to Borg Wa	iner.
	,		0	
.12/10/84		,		
was informed by	Mr. Mak	n 4))	Two dey that	Mudex
110 3110001160 403	1 +60 8011	a Fire	M Hay Hay	<i>*</i>
con surginal conference for	2 CC / CC	MARKE !	77.63	
				
		•		
-	·	· · · · · · · · · · · · · · · · · · ·		
•				
			:	
			• •	
The second secon				
				
				
RECOMENDATIONS			·	
•	• • •			•
INVESTIGATED BY:		FURTHER		APPROVED BY
signed	title		Super.	
ASSISTED BY:	tilla -	- C (2)	The state of the s	1- G6

Bureau of Industrial Site Evaluation Environmental Cleanup Responsibility Act

Report of Inspection

ECRA Case #85161

Date of Inspection 7/16/85

Inspection Category: Preliminary
Inspector: Vincent Nykiel

Industrial Establishment:

Nuodex, Inc.

Location: Industrial Ave.

Fords, Middlesex County

Individuals Involved:

John Wnek, Princeton Aqua Science

Warren Libutti, Princeton Aqua Science

Robert Thierfelder, Nuodex, Inc.

Phil Sandine, NJDEP, BEERA

NARRATIVE DESCRIPTION

The purpose of this site inspection was to become familiar with the 170 acre Nuodex facility. I informed those present that Mr. Sandine and I wanted on overview of the facility and its past operations as we were scheduled to meet in-house on July 17, 1985 to discuss the Sampling Plan of Noudex and Sherwin-Williams, one company adjacent to Nuodex.

Mr. Thierfall:

phosphate, tributoxycthy: phosphate, diphenyl decyl phosphice, and had a herbicide. From the roof of Building K-18, Mr. Whek showed us the western boundary line of the property and the location of Sherwin-Williams. The southern 1/3 of the site, adjacent to the Raritan River, is mostly wetlands and Nuodex representatives claim this area was never used by Nuodex. The central 1/3 of the property contains two sludge ponds, Landfills L2 and L3, and some wetlands. The northern 1/3 of property contains the buildings, tank farm, transformers, Landfill L4, and part or all of three ponds.

We walked the parts of northern and central parts of the facility, and observed the sludge ponds, Landfills L2 and L3, areas where underground storage tank were and are located, the tank farm areas and the drum storage area. Mr. Sandine and I observed two areas where vegetation was completely missing, one area between Landfills L2 and L3, one between Bldg 12 and the 2 salt tanks. We also observed several sets of transformers on the property.

In the area between Landfills L2 and L3 I observed an area approximately 10 x 25 feet which was oil stained. The spill was in a topographic depression apparently in a wet area. I also observed Building 60 where hazardous waste/substances are stored. This structure has a concrete floor about 5 feet above the ground level, has no walls but is covered by a roof. This structure is covered under RCRA, and the status of the Lagoons, Landfills, and ponds relative to NJPDES and RCRA is to be determined.

I informed those present that personnel from RCRA and NJPDES would be working with ECRA staff members to coordinate any cleanup/sampling activities. I took several photographs at the site.

III A BALLET

DEFICIENCIES NOTED

- 1. Small landfill on-site.
- 2. Areas not addressed in the Sampling Plan including transformers, areas devoid of vegetation, underground storage tanks and landfills.

ACTIONS REQUIRED ON THE PART OF THE APPLICANT

- 1. Submit an aerial photograph of the site (Mario Ceprini hand delivered this on July 18, 1985).
- 2. Nuodex must submit a summary table describing the number, location, status (excavated or still in place), post excavation sampling results, size, and depth of all underground storage tanks on-site (received 29 July 1985 by BISE).
- 3. Nuodex must submit information on the number, kinds (PCB containing or not), location and sampling proposed for the soil near all transformers.
- 4. Describe the past use of the partially buried wooden, water filled 15 x 6 x 4 foot trench between Building 22 and the boiler room.
- 5. Submit a map clearly depicting all floor drains, any chemical sewers, storm system, and/or sanitary lines on-site. If old diagrams and blueprints fail to accurately show the drain system at the site, Nuodex must conduct a dye or smoke test to fully varify the system(s).
- 6. Describe the past use of the cooling tower sump adjacent to Bldg 30.
- 7. Remove all solid waste and any hazardous waste from the "waste staging area" between the sludge ponds and Sampling Location #17.
- 8. Provide further information to BISE on any herbicide/insecticide production at the facility.
- 9. Prove the intermity of any underground-storage tanks to remain
- 10. Determine source (if possible) and constituents of oil contaminated soil in the topographic depression between Landfills L2 and L3.

ACTIONS REQUIRED ON THE PART OF BISE

1. Set up another date for a full inspection to include a tour of the interior of all buildings on-site.

2. Comment on the Sampling Plan submitted to BISE on June 11/ 1983

Inspector/Case Manager Signature

Approved:

, Assistant Chief

Burgay of Industrial Site Evaluation



PRINCETON AQUA SCIENCE

165 Fieldcrest Avenue • CN 7809 • Edison, New Jersey 08818-7809 • Telephone (201) 225-2000

June 26, 1985

Ms. Maria Petix-Kent
Bureau of Industrial Site Evaluation
Division of Waste Management
New Jersey Department of Environmental
Protection
CN-028
Trenton, New Jersey 08625

RECEIVED

JUL 2 10 35 AH 85

DIVISION OF
HSMA-BISE

RE: ECRA Case #85161

Nuodex Inc. - Fords Plant

Dear Ms. Petix-Kent:

The following information is provided in response to the deficiency noted in the "Checklist for Completeness of Initial Notice" dated June 14, 1985.

All underground storage vessels at this site will be exhumed. No precision tests will be executed on these tanks. A copy of the contract for removal of three (3) 10,000 gallon fuel tanks and one (1) 1,000 gallon waste oil tank including cleaning and disposal of residual liquids, is attached. The work has been completed at this time.

Soil samples were collected from the base and/or sides of the excavation. Analysis was performed on the samples for total petroleum hydrocarbons. The results of analysis and details on sampling locations and protocol will be submitted under separate cover.

The remaining four (4) underground tanks will be removed at the time of general site cleanup as required by the Enviornmental Cleanup Responsibility Act (ECRA). Further sampling to assess the impact of any possible leaking at these tanks will be executed upon removal.

Ms. Maria Petix-Kent NJDEP June 26, 1985 Page 2.

THE REPORT OF THE PARTY OF THE

Please feel free to call should you have any further questions regarding this matter.

Very truly yours,

PRINCETON AQUA SCIENCE

John Wnek

Project Manager

Waste Management Division

JW:PJ:bjl #8410 Enclosure

cc: Paul T. O'Brian, Esq.



PRINCETON AQUA SCIENCE

165 Fieldcrest Avenue • CN 7809 • Edison, New Jersey 08818-7809 • Telephone (201) 225-2000

July 24, 1985

Mr. Vincent Nykiel, Supervisor
New Jersey Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration
Bureau of Industrial Site Evaluation
CN-028
Trenton, New Jersey 08625

RE: Nuodex Inc., Fords Facility ECRA Submission Requested Additional Information

Dear Mr. Nykiel:

Enclosed is the information that you requested related to the Nuodex Inc. Fords Facility ECRA Submission. The enclosed information includes a summary table describing underground tanks at the facility and a descriptive report detailing the removal of four (4) underground tanks from the facility in June of 1985. If you have any questions about this information please do not hesitate to contact me at (201)-225-2000 ext. 123.

Very truly yours,

PRINCETON AQUA SCLENCE

John Wnek Project Manager Waste Management Division

JW:dr #8410-031

cc: Mario Ceprini Hal Hees

Nuodex Inc. Fords, New Jersey

Underground Tank Description

Tank I.D./Location	Volume	Contents	Construction Material	Туре	Age	Status
10,000 gallon next to Bldg. 35	10,000 gallon	#2 Fuel 0il	Carbon Steel	Underground	≃ 41 Years	Excavate
20,000 gallon next to Bldg. 22	20,000 gallon	#2 Fuel Oil	Carbon Steel	Underground	!	Empty, will be leak tes ec and/or remo ec
1,000 gallon next to Bldg. 56	1,000 gallon	Motor 0il	Carbon Steel	Underground	≅ 41 Years	Excavated
2,000 gallon next to Bldg. 57	2,000 gallon	Gasoline	Carbon Steel	Underground		Contains = Or gallons, wi l be leak tes e and/or remo e
	10,000 gallon next to Bldg. 35 20,000 gallon next to Bldg. 22 1,000 gallon next to Bldg. 56	10,000 gallon next to Bldg. 35 10,000 gallon 20,000 gallon next to Bldg. 22 20,000 gallon 1,000 gallon ext to Bldg. 56 1,000 gallon	10,000 gallon next to Bldg. 35 10,000 gallon #2 Fuel Oil 20,000 gallon next to Bldg. 22 20,000 gallon #2 Fuel Oil 1,000 gallon next to Bldg. 56 1,000 gallon Motor Oil	Tank I.D./Location Volume Contents Material 10,000 gallon next to Bldg. 35 10,000 gallon #2 Fuel Oil Carbon Steel 20,000 gallon next to Bldg. 22 20,000 gallon #2 Fuel Oil Carbon Steel 1,000 gallon next to Bldg. 56 1,000 gallon Motor Oil Carbon Steel	Tank I.D./Location Volume Contents Material Type 10,000 gallon next to Bldg. 35 10,000 gallon #2 Fuel Oil Carbon Steel Underground 20,000 gallon next to Bldg. 22 20,000 gallon #2 Fuel Oil Carbon Steel Underground 1,000 gallon next to Bldg. 56 1,000 gallon Motor Oil Carbon Steel Underground	Tank I.D./Location Volume Contents Material Type Age 10,000 gallon next to Bldg. 35 10,000 gallon #2 Fuel Oil Carbon Steel Underground ≈ 41 Years 20,000 gallon next to Bldg. 22 20,000 gallon #2 Fuel Oil Carbon Steel Underground ≈ 34 Years 1,000 gallon next to Bldg. 56 1,000 gallon Motor Oil Carbon Steel Underground ≈ 41 Years 2,000 gallon next to Bldg. 57 2,000 gallon Gasoline Carbon Steel Underground ≈ 41 Years

Note: All tank locations are indicated on Figure 4 of Submission document

The Removal of Underground Oil Storage Tanks at
The Nuodex Fords Facility

June, 1985

TABLE OF CONTENTS

	Page
Introduction '	1
Observation	2
Conclusions	5

Appendix 1: Geologic Observations

Introduction

On Wednesday June 5, 1985 Wertheim contractors started cleaning and excavating one (1) one thousand gallon oil storage tank next to building 56 and three (3) ten thousand gallon tanks next to building 35 at the Nuodex Fords facility. The location of the oil tanks are indicated in Figure 1. The tanks were cleaned, removed from the ground and transported for disposal. Visually contaminated soil was then removed and staged next to the excavation areas on asphalt surfaces. Princeton Aqua Science personnel were present during the excavating operations to make observations and collect samples for analysis. All samples were analyzed for petroleum hydrocarbon content using EPA approved methodologies.

Observations

Site 1: One thousand gallon oil tank removal

The one thousand gallon oil tank was removed leaving an excavation approximately 16 ft. x 8 ft. x 5 1/2 ft. deep. The soil in the excavation area was mostly fill material consisting of orange brown silty sands with fine and medium gravel. Two sample points were chosen from the bottom of the excavation and these samples were found to contain 1,360 ppm and 550 ppm of petroleum hydrocarbons for samples T-1 and T-2 respectively (see figure 2). The excavated material was covered with plastic until transport and disposal by Wertheim contractors. The size of the excavation was limited by pavement on the north and south and a concrete footing on the east side of the area. The analytical results relevant to Site 1 are tabulated below.

Table 1: Petroleum Hydrocarbon Analytical Results for Area 1

Sample Description	Petroleum Hydrocarbon * mg/kg dry weight
T-1, North End of Tank Excavation	1,360
T-2, South End of Tank	550

*Samples analyzed according to Method 3540 "Test Methods for Evaluating Solid Wastes" 1984 update and Method 418.1 "Methods for Chemical Analysis of Water and Wastes" USEPA 3/79.

The excavation area was filled with sand slightly above grade to provide for water runoff and covered with plastic. A composite of the sand fill material was collected for analysis and determined to contain 17 mg/kg dry weight of petroleum hydrocarbons.

Site 2: Three ten thousand gallon tank removal

The three ten thousand gallon oil tanks were removed leaving an excavation approximately 37 feet x 32 feet x 11 feet deep. The soil in the excavation area was fill material consisting of brown and tan coarse to fine sands with fine to medium gravel. Ground water was evident at approximately 10 1/2 feet. Four samples on the bottom and one on the east side of the excavation were collected for analysis (see figure 2). Samples of the groundwater and excavated material were also collected for analysis. The results of this analysis are presented in Table 2:

Table 2: Petroleum Hydrocarbon Analytical Results for Area 2

Sample Description	Petroleum Hydrocarbons* mg/kg dry weight
•	mg/kg dry werght
T-3	4,100
T-4	. 6,000
T-5	26,600
T-6	12,300
T-7, East Side of	
excavation 4 ft. from bottom	7,090
Removed Soil composite	
large pile	11,000
Removed Soil composite	•
small pile	3,400
Water from the bottom	of 70 mg/3

^{*} Samples analyzed according to Method 3540 "Test Methods for Evaluating Soild Wastes" 1984 update and Method 418.1 "Methods for Chemical Analysis of Water and Wastes" USEPA 3/79.

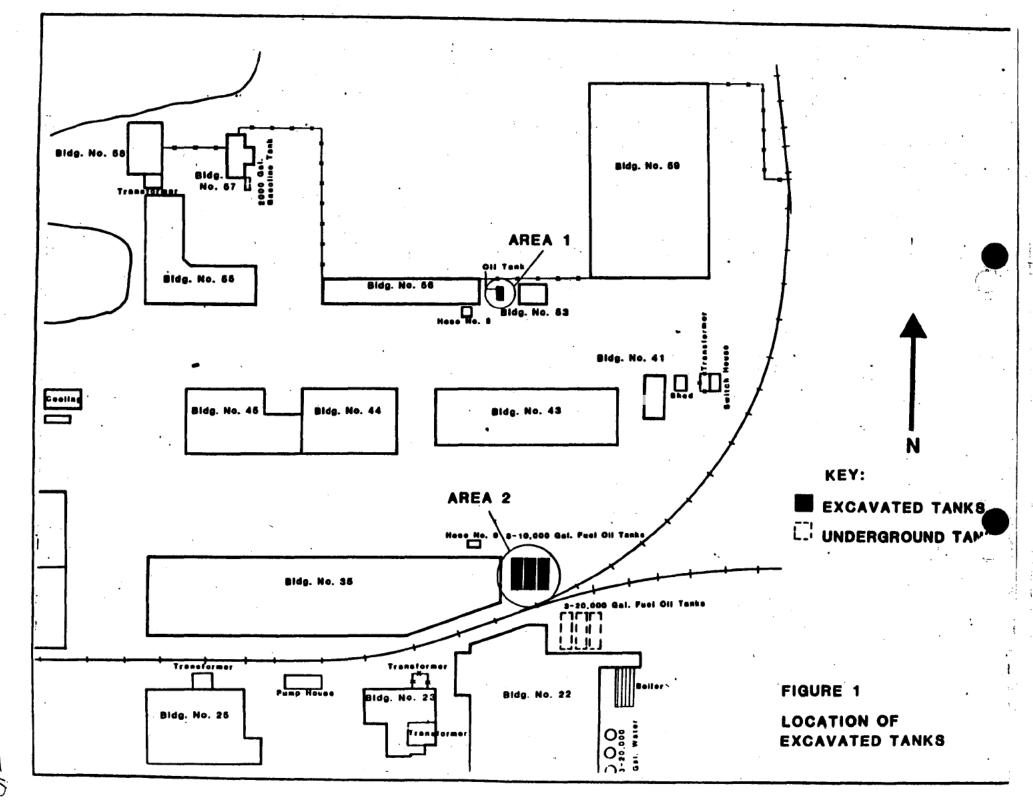
Any visible oil material on the bottom of the excavation was removed using a vac truck and absorbent pads. The excavation continued until encountering groundwater at a depth of 10 1/2 feet. Digging on the north, south and west sides of the area extended until foundations or footings were encountered. An underground electrical wire was also unearthed along the north side of the excavation limiting access in that direction.

Digging was concluded due the possibility of endangering the integrity of the surrounding structures. All soil removed from the excavation was covered with plastic until transport and disposal by Wertheim contractors. The excavation was then filled two feet above groundwater level with sand and lined with plastic. The site was filled with sand slightly above grade to provide for water runoff and covered with plastic. The underground plastic liner was used to maintain clean fill above the liner if the material must be removed at a later date. A composite of the sand fill material was collected for analysis and determined to contain 17 mg/kg dry weight of petroleum hydrocarbons.

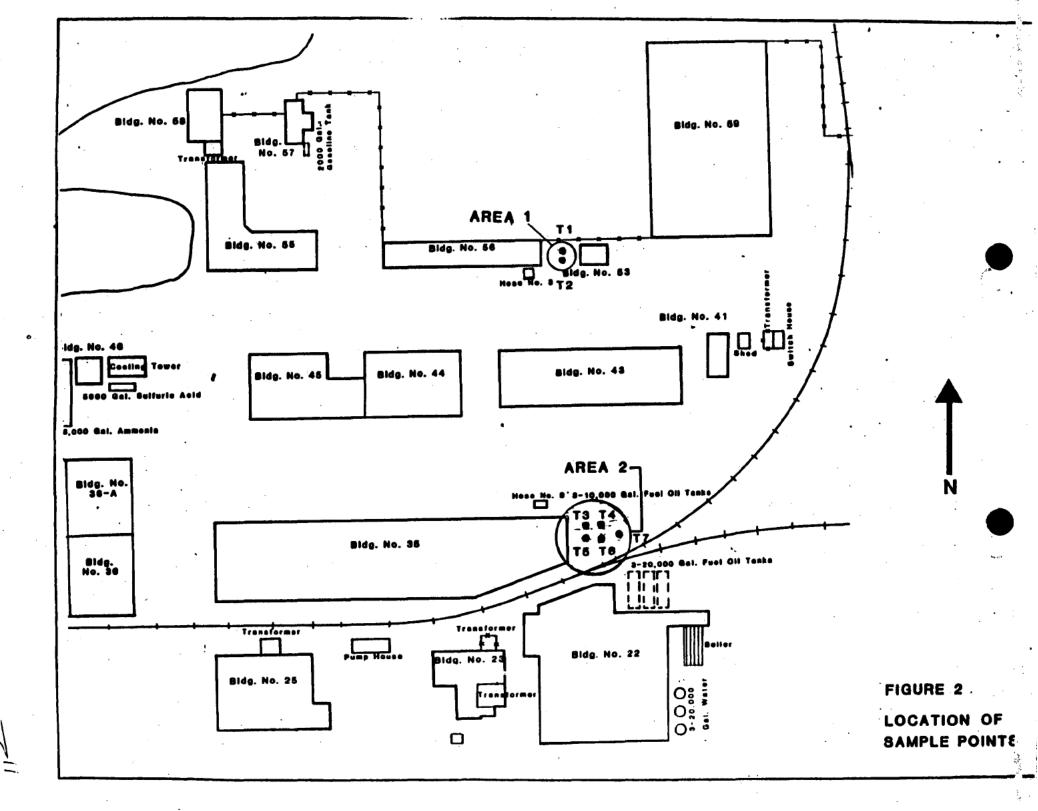
Conclusions

The laboratory data indicates petroleum material present in the concentration range of 4,100 ppm to 26,600 ppm at the groundwater level of Area 2. Petroleum Hydrocarbon concentrations of 550 ppm to 1,540 ppm were also detected for Area 1.

The sources of the contamination have obviously been removed and the horizontal extent of excavation is limited by structures in both areas. The vertical extent of excavation for Area 2 has already encountered groundwater and should not continue below this depth. Further action for area 2 should be addressed after removal of the three twenty thousand oil storage tanks located between excavation Area 2 and building 22.



حر



(_

Appendix 1: Geologic Observations

pas

TEST PIT LOG

PRINCETON AQUA SCIENCE

DATE	START	6-7-	PS TIME 9:40 PROJECT No. 8	410-035							
DATE	FINISH	<u>6-7</u>	-85 TIME 10:00 TEST PIT No	AGEA 1							
CLIENT NUODEX SITE NUODEX - FORDS											
SURFACE ELEVATION EXCAVATOR											
DATU	м		EQUIPMENT								
	WATER ELEVATION Not Excountered PAS REP. Z.C. LANDLE										
CEPTH		MOIST	IDENTIFICATION	REMARKS							
-0-	N.A.			Execution en							
	ı		File maileras - nos uniform toronifame.	6' × 8' × 5.5'							
			North west corner - Onange-brown course, mediunt	of an under							
			to Free SAUD, lettle Silt, trace fine Gravel. Gute - Dark brown coarse to fine SAND, little	ground .							
			Silt, little medium to fine Granel.	sil tonk.							
-5-				East foce of							
			·	excavation							
			ADDITIONAL REMARKS	is concrete							
			Brich fragments, metal and slag								
	Ì		material observed in the bottom of the								
-10-			execuation								
			•								
1											
				•							
-15-		ļ									
20											
40		1		1							

TEST PIT LOG

PRINCETON AQUA SCIENCE

DATE	START	6-7-	TIME 9:00 AM PROJECT No.84	10-035
DATE	FINIS	H <u>6-7-</u>	TIME 9:40 Am TEST PIT No	. Area 2
CLIE	NT _ <i>N</i> U	ODEX	SITE NUODEX - FOLDS	
SURF	ACE EL	EVATIO	EXCAVATOR	
DATU	м		EQUIPMENT	
WATE	R ELEV	ATION	106 below ground level PAS REP. R.C. Landle	
DEPTH	DENS.	MOIST	IDENTIFICATION	REMARKS
	N.A.		G" MACABAM	Grenation de 37 x 32 x 11
	. ♦	DEY	Fill -	
	•		Brown and Tan coarse to fine	7 ill material
			· SAND, Little Sill, little	The side
5		DAMP	medium to fine Gravel	walls in the excevation
	-		macon of the second	The second
·		to		
	,	Moist	•	
10	•			uster Lande 106
		Wet	Bottom of Exconetion e 11'0"	
			ADDITIONAL REMARKS	
		·	oil when to it.	•
-15-			much of the soil remaining in the expanation	·
			contains petroleum product.	
				,
20				,



State of Arm Bersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

CH 029
TRENTON: NEW JERSEY 08625

Nuodex, Inc. Turner Place P.O. Box 365 CERTIFIED MAIL
RETURNED RECEIPT REQUESTED

Placataway, New Jersey 08854

RE: NJPDES Permit No. NJ0000116

Effective Date: ..

ILIN 1 5 1984

IN NO

Dear Sir:

Enclosed is the final NJPDES/IWMF/Ground Water Discharge Permit and Notice of Authorization to discharge pollutants to the ground water, issued in accordance with the New Jersey Pollutant Discharge Elimination System regulations, N.J.A.C. 7:14A-1 et seg. Violation of any condition of this permit may subject you to mignificant penalties.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6 you may submit a request to the Administrator for an adjudicatory bearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory bearing may be found in N.J..A.C. 7:144-8.8 through 8:13. The request should be made to:

Administrator
Water Quality Management Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

Application for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

If you have any questions on this action, please contact Robert Berg, Supervisor, Land Application of Wastewater Section, at (609) 292-0424;

Very truly yours,

John J. Trels, Chief

Ground Water Discharge Fermita

Water Guality Management

New Jersey in An Louis Expositional Employer

11

sed

, 1



STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION



PERMIT NO.

ISSUANCE DATE

EFFECTIVE DATE

- CXPIRATION DATE

NJ0000116

June 15, 1984

July 15, 1984

July 14, 1989

ISSUED TO

Nuodex, Inc.

Turner Place P.O. Box 365

Piscataway NJ 08854

FOR ACTIVITY/FACILITY AT

Nuodex, Inc.

Industrial Avenue

Fords NJ 08863

Block 93, Lot 100

OWNER

SAME AS APPLICANT

ISSUING DIVISION

Water Resources

Coasta! Resources

☐ Environmental Quality

TYPE OF PERMIT

NJPDES Initial Interim Fermit for Discharge to

Ground Water - IWMF

STATUTE(S)

APPLICATION NO.

N.J.S.A.

58:10A-1 et sec.

B.J.A.C.

.J.A.C.

7:14A-1 et seq.

APERMITTO require a comprehensive ground water monitoring program and a revised closure plan for the two (2) unlined sludge settling lagoons at the Nuodex, Inc. facility in Fords, New Jersey. The discharge to the lagoons ceased on January 19, 1983. The ground water monitoring program to be implemented will be in conformance with the BCRA and BJPDES requirements.

BY AUTHORITY OF:

John W. Gaston, Jr., P.E.

Director

Division of Water Resources

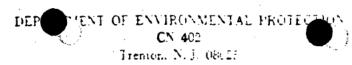
DEF AUTHORIZATION

For DEF- DOE

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY FACILITY SITE

-K²









he New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments companying same application, and applicable laws and regulations. This permit is also subject to the further conditions of stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

mit No.	laspance Date	Effective Date		Expiration Date	
NJ0000116	JUN 1 5 1984	JUL	1 5 1984	JUL 1 4 1984	
me and Address of Applican odex, Inc. rner Place 0. Box 365 scataway NJ 08854	Location of Activi Nuodex, Inc. Industrial Aver Fords NJ 08863 Block 93, Lot	nue	Name and Address of Owner SAME AS APPLICANT		
uing Division X Water Resources Coastal Resources Environmental Quality Other	Type of Permit N. Interim Permit to Ground Water	for Discharge	56:10A-	N.J.S.A. Application No. 1 et seq. NA. 1 et seq.	

mis permit requires Nuodex, Inc. located in Fords, New Jersey to monitor the ground water quality neath the plant site by operating and maintaining 29 ground water monitoring wells according to a specific and general conditions of this Initial Interim NJPDES permit. The Initial Interim PDES permit is intended to establish an adequate ground water monitoring program at the above med facility. This permit is only intended to obtain ground water data to evaluate the current atus and impact of this facility on ground water. It shall not be construed, nor is it intended be an approval of any activity that the permittee has conducted which adversely effects the vironment, ground or surface water quality, or threatens the public health, safety, or welfare.

The issuance of this Initial Interim permit does not indicate that the Department has made determination of the technical adequacy of the information available. Initial Interim permits all not be construed as, nor are they intended to be, long-term approvals; these permits are limited duration.

The data generated through the Initial Interim NJPDES permit will be used by the Department evaluate the current status and inpact of existing facilities or ground variant, along. It will still be pertured information to determine if there is any potential or actual threat to plud health of safety or damage to the environment due to current or past practices. Based on a information generated by the issuance of this permit, the Department may require the permittee reduce the quantity of discharge, upgrade or install additional treatment, install add#tional mitor wells, conduct ground water decontamination procedures or cease discharges to waters of a state.

The issuance of this Initial Interim NJPDES permit does not bind the Department to renew is permit, nor does it relieve the permittee of the duty to submit additional information as exified in Chapters t and 10 of the NJPDES regulations at the time of application renewal or may be required by the Department prior to permit renewal. Additionally, this Initial Interim PDES permit does not relieve the permittee of any liabilities associated with public health or fety problems or environmental damage created as a result of the permittee's activities.

Documents attached hereto shall become part of this permit.

proved by the Department of Environmental !	Protection	ntal F	Environme	o:	Department	eΙ	the	br	peroved
---	------------	--------	-----------	----	------------	----	-----	----	---------

AUTHORITY OF:

MEN W. GASTON. JR.

RECTOR.

VISION OF WATER RESOURCES

Distillation of the second

DATE

ARNOLD SCHIFFMAN, ADMINISTRATOR

WATER OHALLTY MANAGEMENT

he word permit means "approval, certification, registration, etc."

(GENERAL CONDITIONS ARE ON THE REVERSE SID

 K^{3}

FOR N.J.P. E.S. INITIAL INTERIM INDURIAL WASTE MANAGEMENT FACILITY PERMIT TO DISCHARGE INTO THE GROUND WATERS OF THE STATE

Name and Address of Applicant:

Nuodex, Inc. Turner Place P.O. Box 365 Piscataway NJ 08854

Name and Address of Facility Where Discharge Occurs:

Nucdex, Inc. Industrial Avenue Fords NJ 08863 Block 93; Lot 100

Receiving Water:

Ground waters of the State. The discharge is to the Magothy and Raritan Formations of Cretaceous Age.

Location of Discharge:

The two (2) settling lagoons are located on the property of Nuclea, Inc. intediately south of Infustrial Avenue in Fords. New Jersey. The two lagorns are approximately 2000 feet south of Industrial Avenue and 3500 feet north of the Raritan River. The Nuclean, Inc. plant, which was formerly Tenneco Chemicals, is located one mile west of the Garden State Parkway.

Description of Discharge:

The Nuodex, Inc. Fords plant manufactures Formaldehyde, Nuosept 95 (preservative for latex paint), sulfidel (parasiticide fungicide for lotions and creams for skin disease), Guaiacol Special C (anti-skinning agent for paints, inks, varnishes, etc.) and Phosphate/Phosphite esters which includes Phenyl Diisodecyl Phosphite, Diphenyl Isodecyl Phosphite, Tributoxy Ethyl Phosphate, and tris Octyl Phosphate.

SPECIAL CONDITIONS

1. Within the two existing sludge settling lagoons, the liquid portion and the sludge shall be analyzed in accordance with Section 4.3.1 of the "Additional General Conditions for Industrial Waste Management Facilities and Hazardous Waste Interim Status Facilities" which is part of this permit.

Also, sludge analyses shall be performed as per Section 4.3.3 for the sludge disposal area located southeast of the facility. These analyses shall include all parameters listed in Table 4 and all parameters listed in the expected waste composition in Section 4.2 of the "Additional General Conditions..." of this permit.

The sludge sampling results shall be submitted to the Department within sixty (60) days from the issuance date of this final permit.

2. The Closure/Post Closure Plan, dated November 30, 1982, for the two sludge settling lagoons has been reviewed by the Bureau of Ground Water Discharge Permits within the Division of Water Resources. The plan is disapproved and rejected for not being in conformance with all existing state and federal requirements concerning closure of surface impoundments.

Current New Jersey State Hazardous Waste Regulations, N.J.A.C. 7:26-11.3(e) require the owner or operator of surface impoundments to remove at closure:

- Standing liquids
- Waste and waste residues
- 3. The liner, if any; and
- 4. Underlying and surrounding contaminated soil

In edition, the post closure ground water monitoring program outlined is not in compliance with 40 CFR 265.117 for the parameters to be analyzed or the frequency of sampling:

The permittee shall submit to the Department within ninety (90) days from the effective date of the final permit, a revised comprehensive closure/post-closure plan for the two sludge settling lagoons, old sludge disposal area and any other on-site source of contamination identified under condition 5 below. The closure plan for the settling lagoons and old sludge disposal area shall be based upon the sampling results from condition 1 and on the waste classification received from the Division of Waste Management. The required plan shall also include a time schedule for implementation of each stage of the closure and post-closure activities that will be conducted. No closure procedures shall commence until the closure plan has been approved by the Department. Until 1971 the two (2) unlined lagoons, which are four feet in depth with a 150 feet square bottom area and a 166 feet square top area, received neutralized process waste water from the facility. The lagoons basically functioned as settling lagoons and the effluent was pumped to the Middlesex County Utilities Authority treatment plant. After 1971 the amount of settling occurring in the lagoons was greatly reduced because the retention time was now only equal to the time it took for the wastewater to flow from the influent line into the lagoons, across the lagoons, to the outfall line from the lagoons to MCUAs pumping station.

The discharge into the lagoons ceased on January 19, 1983 and the wastewater is now piped directly to MCUAs pump station. Presently, each pond has approximately two feet of sludge evenly distributed over the bottom surface.

Permit Conditions:

lssue an Initial Interim Industrial Waste Management Facility Permit with the attached special and general conditions.

WQMll2:ljp

- 4. Based upon the results of the sludge testing required under condition 1 a classification of the waste will be given and the permittee shall dispose of the sludge in a manner approved by the Department. The request for a waste classification along with supporting analyses shall be forwarded to the Bureau of Hazardous Waste Manifest and Classification.
- 5. Existing ground water monitoring data indicates significant contamination of the ground water beneath the Nuodex, Inc. site. The data also indicates that off-site sources are partially responsible for the known contamination. Recognizing this fact, the permittee shall submit within ninety (90) days from the effective date of the final permit, a plan which identifies and proposes actions for the elimination of on-site sources of contamination. Specific target dates for implementation of any remedial plans shall also be included.
- 6. The Department reserves the right to require at a later date the submittal of a site-wide remedial action plan that addresses ground water containment, decontamination and proper treatment/disposal of contaminated ground water. This plan shall be submitted within 90 days of written notification by the Department.
- 7. The ground water monitoring program outlined in this permit shall be adhered to for at least one (1) year. Based upon the results of the first year of monitoring, the permittee may request a revision to the monitoring permit.

WQM112:ác



State of New Jersen

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

CN 029 TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.È.
DIRECTOR

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

John J. Mahon, Plant Manager Nuodex Inc. Industrial Ave. Fords, N.J. 08863

March 7, 1985

RE: NJPDES Permit No. NJ0000116 Effective Date: May 1, 1985

Dear Mr. Mahon:

Enclosed is the Final NJPDES/DSW Permit and Notice of Authorization to discharge pollutants to Black Ditch and Slingtail Brook, issued in accordance with the New Jersey Pollutant Discharge Elimination System Regulations, N.J.A.C. 7:14A-1 et seq. Violation of any condition of this permit may subject you to significant penalties.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6, you may submit a request to the Administrator for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J.A.C. 7:14A-8.9 through 8.13. The request should be made to:

Administrator
Water Quality Management Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

Applications for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

If you have any questions on this action, please contact Mr. Edward Post, P.E., Chief, Industrial Permits Section at (609) 292-0407.

Sincerely,

Paul C. Kurisko, P.E., Chief

Bureau of Industrial Waste Management

Water Quality Management

New Jersey Is An Equal Opportunity Employer



STATE OF NEW JERSEY NT OF ENVIRONMENTAL PROTECTI

NOTICE OF AUTHORIZATION



PERMIT NO. NJ0000116

Nuodex, Inc.

Turner Place P.O. Box 365

ISSUED TO

ISSUANCE DATE

EFFECTIVE DATE

EXPIRATION DATE

March 7, 1985

May 1, 1985

July 14, 1989

FOR ACTIVITY/FACILITY AT

Industrial Avenue

Fords, NJ 08863

OWNER

Same as applicant

ISSUING DIVISION Water Resources

Piscataway, NJ 08854

TYPE OF PERMIT

STATUTE(S)

APPLICATION NO.

NUPDES/DSW

N.J.S.A.

NJ00001166

58:10A-1 et seq.

A PERMIT TO

discharge stormwater runoff to Black Ditch and Slingtail, classified as TW-1 waters, in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

By the Authority of: John W. Gaston Jr., P.E. Director Division of Water Resources

DEP-008 2/84

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.



CN 402 Trenton, N.J. 08625

PERMIT



The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit. Effective Date Expiration Date Issuance Date Permit No. July 14, 1989 NJ0000116 March 7, 1985 May 1, 1985 Location of Activity/Facility
Industrial Avenue Name and Address of Owner Same as Applicant Name and Address of Applicant Nuodex, Inc. Fords, NJ 08863 Turner Place P.O. Box 365 Piscataway, NJ 08854 Type of Permit NJPDES/DSW Issuing Division Statute(s) N.J.S.A. Application No. NJ 0000116 Water Resources 58:10A-1 et seq.

This permit grants permission to:

discharge stormwater runoff to Black Ditch and Slingtail, classified as TW-1 waters, in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

Approved by the Department of Environmental Protection By the Authority of:

John W. Gaston P.E.

Director

Division of Water Resources

The word permit means "approval, certification, registration, etc."

Arnold Schiffman Administrator
Water Quality Management

3/7/85

DATE

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

State of New Iersen DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

JOHN W. GASTON JR., P.E. DIRECTOR

Water Quality Management

CN 029 TRENTON. NEW JERSEY-08625

> DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Dr. Mario Ceprini Nuodex Inc. Turner Place Piscataway, New Jersey

March 19, 1986

RE: Nuodex Inc. - Fords

NJPDES Permit No. NJ0000116

Dear Dr. Ceprini:

Enclosed is the previously Public Noticed major modification to your existing NJPDES/DGW Permit. This modification is added to and made part of your Permit. It requires you to close your two infiltration - percolation lagoons according to the attached conditions. This major modification is issued in accordance with Jersey Pollutant Discharge Elimination the New Regulations, K.J.A.C. 7:14A-1 et seg. and you are required to comply with the terms and conditions of this Permit.

Within thirty (30) calendar days following your receipt of this permit modification, you may submit a request for an adjudicatory hearing to reconsider or contest the conditions of this Permit. Regulations regarding the format and the requirements requesting for an adjudicatory hearing may be found in N.J.A.C. 7:14A-F.6 through 8.13. The request should be made to:

> Administrator Water Quality Management Element Division of Water Resources CN-029 Trenton, New Jersey 08625

If you have any questions on this action, please contact Ms. Kathryn Davies, Land Application of Wastewater Section, at (609) 292-0424.

Sincerely.

John J. Trela, Ph.D., Chief Bureau of Ground Water Quality Management

WOM 141 Enclosures

New Jersey Is An Equal Opportunity Employer



until January, 1983.



MENT OF ENVIRONMENTAL PROTECTORY CN 402

Trenton, N.J. 08625



New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments



ompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions d stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit. Issuance Date 6-15-84 Effective Date 7-15-84 Expiration Date ermit No. 7-14-89 NJ# 0000116 Revised Date: 3-14-86 Revised Date:4-15-86 Name and Address of Owner Name and Address of Applicant Location of Activity/Facility Nuodex, Inc. Nuodex, Inc. Turner Place Industrial Avenue SAME AS APPLICANT F.O. Box 365 Fords, NJ 08863 Block 93, Lot 100 <u>Piscataway. NJ 08854</u> Statute(s) N.J.S.A. Issuing Division Type of Permit Application No. NJPDES/DGW Permit Modification 58:10A-1 et seq. NA. for Closure Water Resources This permit modification requires the Nuodex, Inc. - Fords 7:14A-1 et sec.

facility to close two unlined surface impoundments which received neutralized process wastewater

Approved by the Department of Environmental Protection BY AUTHORITY OF:
JOHN W. GASTON, JR., P.E.
DIRECTOR

DIVISION OF WATER RESOURCES

ARNOLD SCHIFFMAN, ADELLISTRATOR WATER QUALITY MANAGEMENT

DATE

FACT SHEET

FOR THE NJPDES PERMIT TO DISCHARGE INTO THE GROUND WATERS OF THE STATE

Name and Address of Applicant:

Nuodex, Inc. Turner Place P.O. Box 365 Piscataway, New Jersey 08854

Name and Address of Facility Where Discharge Occurs:

Nuodex, Inc. Industrial Avenue Fords, New Jersey 08863

Receiving Water:

Ground Water of the State. The potential discharge is to the Magothy and Raritan Formations of Cretaceous Age.

Description of Facility:

The Nuodex, Inc. Fords facility has stopped production of the organic chemicals which had previously been manufactured on-site. These chemicals included formaldehyde, Nuosept 95 (preservative for latex paint), sulfidal (parasiticide fungicide), Guaiacol special C (anti-skinning agent) and Phosphate/phosphite esters.

Description of Discharge:

Until 1971, two (2) unlined lagoons, 3-4 feet in depth and 160 feet long by 150 feet wide, received neutralized process waste water from the facility. Discharge to the lagoons ceased on January 19, 1983 and the waste water was piped directly to the MCUA. Provisions for closure of the lagoons, including liquid, sludge, and contaminated soil removal are contained within this permit modification.

Permit Conditions:

According to the General and Specific Conditions.

SPECIAL CLOSURE CONDITIONS FOR NUODEX, INC.

The permittee shall close the lagoons according to the closure portions of the submitted plan dated September 1985 and entitled Closure and Post-Closure Plans for the Settling Lagoons at the Nuodex, Inc. Fords Facility, with 'the following additional requirements and modifications:

- 1. Within thirty (30) calendar days of the effective date of this permit, the permittee shall remove all standing liquids and sludges from the lagoons.
- 2. Within seven (7) calendar days of removal of standing liquids and sludges from the lagoons, the permittee shall obtain soil samples from a minimum of two (2) locations underlying the deepest portion of each of the two (2) lagoons. These samples shall be analyzed for USEPA Priority Pollutants, Hazardous Waste Characteristics per N.J.A.C. 7:26-8.9 through 8.12 and Total Petroleum Hydrocarbons.
- 3. Within fourteen (14) calendar days of removal of contaminated soil beneath the sludges, the permittee shall obtain samples of the clay-peat confining layer from a minimum of two (2) locations underlying each of the two (2) lagoons. These samples shall be analyzed for USEPA Priority Pollutants and Total Petroleum Hydrocarbons at 0-6", 12-18" and 24-30" intervals, or until the limit of the confining layer is reached.
- 4. Additionally, any contaminated soil surrounding the lagoons must be removed. Therefore, to determine the extent of the horizontal soil contamination and the amount of soil to be removed, soil cores shall be taken around the perimeter of the lagoons at specified locations and depths. The two lagoons may be collectively treated as one waste management area. Three cores, equi-distant from one another shall be taken at a one (1) foot radius and three more cores at a four (4) foot radius from the perimeter of the waste management area. These cores shall be analyzed for USEPA Priority Pollutants Plus 40 and Total Petroleum Hydrocarbons at 6-12", 42-48", and 72-78" intervals or until the confining layer is reached.
- 5. All soil borings shall be archived until closure is complete, certified, and approved by NJDEP.
- 6. Lithologic logs for each of the core locations shall include lithology descriptions per the United States Department of Agriculture (USDA) System.
- 7. Upon completion of each core, the permittee shall immediately seal the boreholes with bentonite slurry weighing not less than 14 pounds per gallon.

- 2. All chemical analyses shall be performed by a NJDEF certified laboratory and the results shall be sent to this Bureau as soon as they become available, but no later than forty-five (45) days from the date of sample collection.
- 9. All chemical analyses shall be accompanied by the Laboratory's QA/QC data representative of the samples required pursuant to this permit. This data shall contain all of the information required in Appendix B and may either be reported on the forms contained within Appendix B or on equivalent forms provided by the laboratory. The completed QA/QC forms must be accompanied by the Laboratory Authentication Statement signed by the Laboratory Manager as defined in N.J.A.C. 7:18, Regulations Governing Laboratory Certification and Standards of Performance.
- Within thirty (30) days after the contaminated soil has been removed from the vicinity of the lagoons, the permittee shall fill the excavated area at least up to the historically highest groundwater table surface. If the fill is obtained from an off-site source, the permittee shall establish that the material contains no contamination above ECRA clean-up guidelines analysing a statistically representative number of soil pollutants plus samples for priority 40 and petroleum. All analyses shall be submitted to the Department hydrocarbons. prior to backfilling. If the fill material is to be obtained from the Nuodex site, then the permittee shall submit to the prior to backfilling. Department for its review and approval a sampling plan detailing the locations both horizontally and vertically (for each soil lithology change) of a statistically representative number soil samples from the proposed source area. All soil samples are to be analyzed for priority pollutants plus 40 and petroleum hydrocarbons and the results are to be submitted to the Department prior to backfilling. Documentation describing former uses of the source area shall also be submitted conjunction with the sampling plan. All berms shall remain place until the permittee receives Departmental approval for removal.
- 11. The permittee shall submit a final schedule for closure within thirty (30) days of the effective date of this permit.
- 12. The Department reserves the right to inspect the site during and after implementation of the approved closure plan at any reasonable time to ensure compliance with permit conditions.
- 13. When closure is completed, the permittee shall submit to the Department certification both by the owner or operator and by an independent New Jersey licensed Professional Engineer that the facility has been closed in accordance with the specifications of this permit and the approved portions of the closure plan.

APPENDIM F

All ground water, sediment (including sludge) and discharge effluent monitoring data shall be accompanied by the following OA/QC information:

- 1. completed sample collection and preservation form
- completed chain-of-custody form
- 3. method blank data
- 4. matrix spike data
- 5. duplicate data
- 6. for GC and GC/MS analyses:
 - a. surrogate recovery data (GC/MS only)
 - b. 4-bromofluorobenzene (BFB) or decafluorotriphenylphosphine (DFTPP) tune data, (GC/MS only)
 - c. when requested, chromatograms or mass spectral data

Forms are presently being drafted for the permittee to use when reporting the above data. These forms will be included in the final permit.

WOM 141

27 AH '84

HN W. GASTON JR., P.E. DIRECTOR

State of New Jersey 27 En of DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOP

CN 029 TRENTON, NEW JERSEY 08625

Nuodex, Inc. Turner Place P.O. Box 365

Piscataway, New Jersey 08854

CERTIFIED MAIL
RETURNED RECEIPT REQUESTED

RE: NJPDES Permit No. NJ0000116

Effective Date:

JUN 1 5 1984

Dear Sir:

Enclosed is the final NJPDES/IWMF/Ground Water Discharge Permit and Notice of Authorization to discharge pollutants to the ground water, issued in accordance with the New Jersey Pollutant Discharge Elimination System regulations, N.J.A.C. 7:14A-1 et seq. Violation of any condition of this permit may subject you to significant penalties.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6 you may submit a request to the Administrator for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J..A.C. 7:14A-8.9 through 8.13. The request should be made to:

Administrator
Water Quality Management Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

Application for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

If you have any questions on this action, please contact Robert Berg, Supervisor, Land Application of Wastewater Section, at (609) 292-0424.

Very truly yours,

John J. Trela, Chief

Ground Water Discharge Permits

Water Quality Management
New Jersey Is An Equal Opportunity Employer

M



STATE OF NEW JERSEY DEPAR MENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION

ay () . A salah kadi a**n taka da taka ka k**aran a menjarah kadi



ASSUANCE DATE

EFFECTIVE DATE EXPIRATION DATE

MJ0000116

June 15, 1984

July 15, 1984 July 14, 1989

ISSUED TO

Nuodex, Inc. Turner Place FOR ACTIVITY/FACILITY AT Nuodex, Inc.

P.O. Box 365

Piscataway NJ 08854

Industrial Avenue

Fords NJ 08863

Block 93, Lot 100

SAME AS APPLICANT

SSUING DIVISION

Water Resources

☐ Coastal Resources

☐ Environmental Quality

TYPE OF PERMIT

NJPDES Initial Interim Permit for Discharge to

Ground Water - IWMF

STATUTE(S) N.J.S.A. APPLICATION NO.

58:10A-1 et seq.

N.J.A.C.

7:14A-1 et seq.

APERMITTO require a comprehensive ground water monitoring program and a revised closure plan for the two (2) unlined sludge settling lagoons at the Nuodex, Inc. facility in Fords, New Jersey. The discharge to the lagoons ceased on January 19, 1983. The ground water monitoring program to be implemented will be in conformance with the RCRA and NJPDES requirements.

BY AUTHORITY OF:

John W. Gaston, Jr., P.E.

Director

Division of Water Resources

DEP AUTHORIZATION

Form DEP-008

7/80

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY IFACILITY SITE.

Name and Address of Applicant:

Nuodex, Inc. Turner Place P.O. Box 365 Piscataway NJ 08854

Name and Address of Facility Where Discharge Occurs:

Nuodex, Inc. Industrial Avenue Fords NJ 08863 Block 93; Lot 100

Receiving Water:

Ground waters of the State. The discharge is to the Magothy and Raritan Formations of Cretaceous Age.

Location of Discharge:

The two (2) settling lagoons are located on the property of Nuodex, Inc. immediately south of Industrial Avenue in Fords, New Jersey. The two lagoons are approximately 2000 feet south of Industrial Avenue and 3500 feet north of the Raritan River. The Nuodex, Inc. plant, which was formerly Tenneco Chemicals, is located one mile west of the Garden State Parkway.

Description of Discharge:

The Nuodex, Inc. Fords plant manufactures Formaldehyde, Nuosept 95 (preservative for latex paint), sulfidal (parasiticide fungicide for lotions and creams for skin disease), Guaiacol Special C (anti-skinning agent for paints, inks, varnishes, etc.) and Phosphate/Phosphite esters which includes Phenyl Diisodecyl Phosphite, Diphenyl Isodecyl Phosphite, Tributoxy Ethyl Phosphate, and tris Octyl Phosphate.

M°

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CN 402

Trenton, N. J. 08625

PERMIT *

lersey Department of Environmental Protection grants this permit in accordance with your application, attachments any ing same application, and applicable laws and regulations. This permit is also subject to the further conditions invalations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

No. Jasuance D	JUN 1 5 1984	Effective Date JUL 1	Expiration 5 1984	JUL 1 4 1984	
me and Address of Applicant odex, Inc. rner Place J. Box 365 scataway NJ 08854	Location of Activi Nuodex, Inc. Industrial Aver Fords NJ 08863 Block 93, Lot	nue	Name and Address of Owner SAME AS APPLICANT		
aing Division ☑ Water Resources ☐ Coastal Resources ☐ Environmental Quality ☐ Other	Type of Permit N. Interim Permit to Ground Water	for Discharge	Statute(s)N.J.S.A 58:10A-1 et seq N.J.A.C 7:14A-1 et seq	. NA	

is permit requires Nuodex, Inc. located in Fords, New Jersey to monitor the ground water quality neath the plant site by operating and maintaining 29 ground water monitoring wells according to specific and general conditions of this Initial Interim NJPDES permit. The Initial Interim PDES permit is intended to establish an adequate ground water monitoring program at the above med facility. This permit is only intended to obtain ground water data to evaluate the current atus and impact of this facility on ground water. It shall not be construed, nor is it intended be an approval of any activity that the permittee has conducted which adversely effects the vironment, ground or surface water quality, or threatens the public health, safety, or welfare.

The issuance of this Initial Interim permit does not indicate that the Department has made letermination of the technical adequacy of the information available. Initial Interim permits all not be construed as, nor are they intended to be, long-term approvals; these permits are limited duration.

The data generated through the Initial Interim NJPDES permit will be used by the Department evaluate the current status and impact of existing facilities on ground water quality. It will so give the Department information to determine if there is any potential or actual threat to lic health or safety or damage to the environment due to current or past practices. Based on information generated by the issuance of this permit, the Department may require the permittee reduce the quantity of discharge, upgrade or install additional treatment, install additional itor wells, conduct ground water decontamination procedures or cease discharges to waters of state.

The issuance of this Initial Interim NJPDES permit does not bind the Department to renew spermit, nor does it relieve the permittee of the duty to submit additional information as cified in Chapters 6 and 10 of the NJPDES regulations at the time of application renewal or may be required by the Department prior to permit renewal. Additionally, this Initial Interim DES permit does not relieve the permittee of any liabilities associated with public health or tety problems or environmental damage created as a result of the permittee's activities.

Documents attached hereto shall become part of this permit.

proved by the Department of Environmental Protection

AUTHORITY OF:

HN W. GASTON, JR.

RECTOR

VISION OF WATER RESOURCES

Call Kiffe

DATE

ARNOLD SCHIFFMAN, ADMINISTRATOR

WATER QUALITY MANAGEMENT

SPECIAL CONDITIONS

1. Within the two existing sludge settling lagoons, the liquid portion and the sludge shall be analyzed in accordance with Section 4.3.1 of the "Additional General Conditions for Industrial Waste Management Facilities and Hazardous Waste Interim Status Facilities" which is part of this permit. Also, sludge analyses shall be performed as per Section 4.3.3 for the sludge disposal area located southeast of the facility. These analyses shall include all parameters listed in Table 4 and all parameters listed in the expected waste composition in Section 4.2 of the "Additional General Conditions..." of this permit.

The sludge sampling results shall be submitted to the Department within sixty (60) days from the issuance date of this final permit.

2. The Closure/Post Closure Plan, dated November 30, 1982, for the two sludge settling lagoons has been reviewed by the Bureau of Ground Water Discharge Permits within the Division of Water Resources. The plan is disapproved and rejected for not being in conformance with all existing state and federal requirements concerning closure of surface impoundments.

Current New Jersey State Hazardous Waste Regulations, N.J.A.C. 7:26-11.3(e) require the owner or operator of surface impoundments to remove at closure:

- 1. Standing liquids
- 2. Waste and waste residues
- The liner, if any; and
- 4. Underlying and surrounding contaminated soil

In addition, the post closure ground water monitoring program outlined is not in compliance with 40 CFR 265.117 for the parameters to be analyzed or the frequency of sampling.

3. The permittee shall submit to the Department within nine-ty (90) days from the effective date of the final permit, a revised comprehensive closure/post-closure plan for the two sludge settling lagoons, old sludge disposal area and any other on-site source of contamination identified under condition 5 below. The closure plan for the settling lagoons and old sludge disposal area shall be based upon the sampling results from condition 1 and on the waste classification received from the Division of Waste Management. The required plan shall also include a time schedule for implementation of each stage of the closure and post-closure activities that will be conducted. No closure procedures shall commence until the closure plan has been approved by the Department.

Until 1971 the two (2) unlined lagoons, which are four feet in depth with a 150 feet square bottom area and a 166 feet square top area, received neutralized plocess waste water from the facility. The lagoons basically functioned as settling lagoons and the effluent was pumped to the Middlesex County Utilities Authority treatment plant. After 1971 the amount of settling occurring in the lagoons was greatly reduced because the retention time was now only equal to the time it took for the wastewater to flow from the influent line into the lagoons, across the lagoons, to the outfall line from the lagoons to MCUAs pumping station.

The discharge into the lagoons ceased on January 19, 1983 and the wastewater is now piped directly to MCUAs pump station. Presently, each pond has approximately two feet of sludge evenly distributed over the bottom surface.

Permit Conditions:

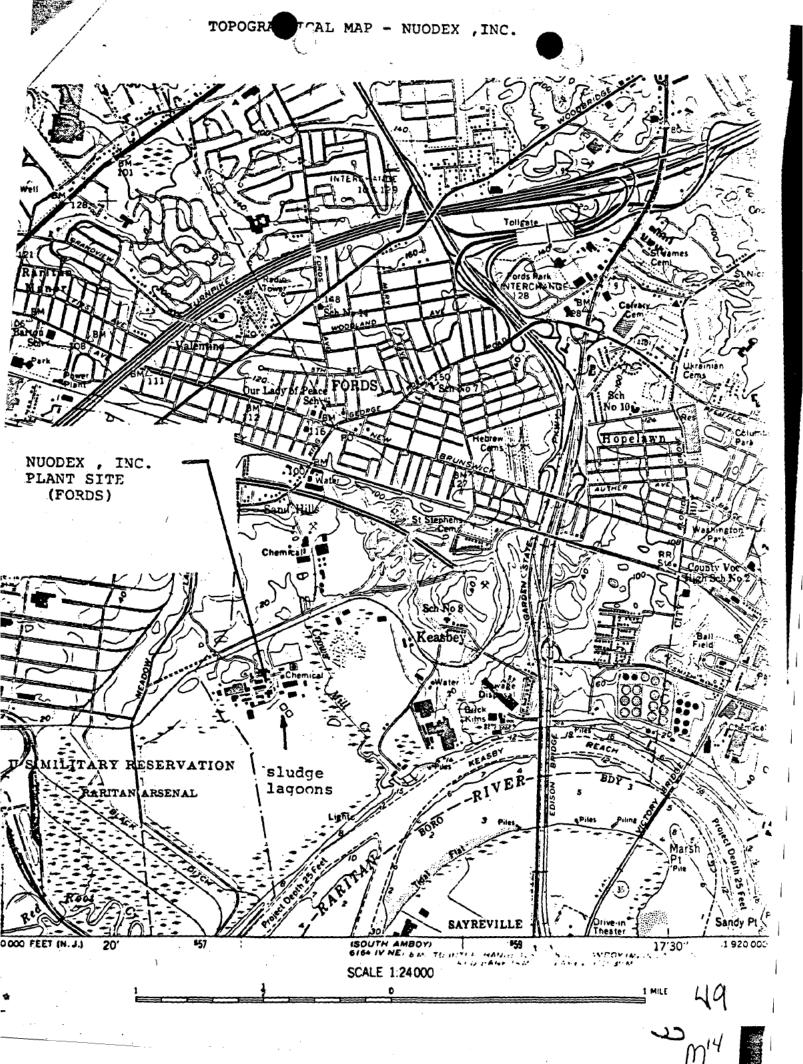
Issue an Initial Interim Industrial Waste Management Facility Permit with the attached special and general conditions.

WQM112:1jp

- 4. Based upon the results of the sludge testing required under condition 1 a classification of the waste will be given and the permittee shall dispose of the sludge in a manner approved by the Department. The request for a waste classification along with supporting analyses shall be forwarded to the Bureau of Hazardous Waste Manifest and Classification.
- 5. Existing ground water monitoring data indicates significant contamination of the ground water beneath the Nuodex, Inc. site. The data also indicates that off-site sources are partially responsible for the known contamination. Recognizing this fact, the permittee shall submit within ninety (90) days from the effective date of the final permit, a plan which identifies and proposes actions for the elimination of on-site sources of contamination. Specific target dates for implementation of any remedial plans shall also be included.
- 6. The Department reserves the right to require at a later date the submittal of a site-wide remedial action plan that addresses ground water containment, decontamination and proper treatment/disposal of contaminated ground water. This plan shall be submitted within 90 days of written notification by the Department.
- 7. The ground water monitoring program outlined in this permit shall be adhered to for at least one (1) year. Based upon the results of the first year of monitoring, the permittee may request a revision to the monitoring permit.

WQM112:do

1 M13





State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WATER RESOURCES CENTRAL BUREAU OF REGIONAL ENFORCEMENT TWIN RIVERS OFFICE PLAZA **STATE HIGHWAY 33**

GEORGE G. McCANN, P.E.

HIGHTSTOWN, NEW JERSEY 08520

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

John A. Wnek, Environmental Affairs Nuodex Incorporated Turner Place P.O. Box 365 Piscataway , New Jersey 08855

Dear Mr. Wnek:

RE: Compliance Evaluation Inspection Nuodex Inc. - Fords Facility NJPDES No. NJ0000116 DGW/DSW Munic/County: Woodbridge Township/Middlesex County

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on May 12, 1988. A copy of the completed inspection report is enclosed for your information.

Your facility will not be given a rating for your Ground Water closure permit since you are undergoing an ECRA closure.

Your facility received a rating of "UNACCEPTABLE" for your discharge to Surface Water due to the following deficiency(ies):

- The limitation of 50 mg/l for Total Suspended Solids was exceeded for discharge 001 with a reported concentration of 160 mg/l (maximum) for the May 1988 quarterly report.
- The minimum pH limitation of 5.0 S.U. for discharge 001 was not met with a reported value of 4.4 S.U. for the May 1988 quarterly report.
- 3. The toxicity limitation of an LC50 greater than or equal to 100 % was not met for discharge 001 with a reported value of 87.5 % for the May 1988 quarterly report.
- 4. The toxicity limitation (LC50 ≥ 100%) for discharge 002 was not met for the February 1988 quarterly report with a reported value of 69 %.

If the surface water discharges continue to show toxicity for the next quarterly report (August 1988), you will be required to implement the toxicity reduction study, pending Department approval, which was proposed in your reply to the Department dated May 21, 1987. In the case of any future pH and/or Total Suspended Solids violations a similar plan for remedial action will be required by the Department within 30 days of the exceedance.

Both the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Federal Water Pollution Control Act, as amended (33 U.S.C., 466 et seq.) provide for substantial monetary penalties and criminal penalties in cases of permit violations.

Please direct all correspondence and inquiries to Maureen Byrne, the Environmental Specialist responsible for this case, who can be reached at 609-426-0786 or by letter through this Division.

Failure to comply with the above will result in the initiation of enforcement action by this Department and/or the U.S. Environmental Protection Agency. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Alfred W. Valencia, Supervisor Compliance Monitoring Unit Central Bureau of Regional

refred m. Clubercia

Enforcement

00362:MB/mcb Enclosure

cc: Richard Baker, USEPA, Region II
Patrick Durack, USEPA, Region II
Laszlo Szabo, Health Officer

Division Bureau bcc:

Byrne Briant ECRA/M. Metlitz



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES CN 029, Trenton, N.J. 08625



DISCHARGE SURVEILLANCE REPORT

PERMIT # NJ OCCU116 NO. OF DISCHARGES 602 CLASS MAJ /IND
DISCHARGER Nuclex Inc Foods Facility
OWNER A this company
MUNICIPALITY <u>Edison Tup</u> COUNTY <u>Fliddlesex</u> WATERSHED CODE R
LOCATION Industrial Avenue, Foods
RECEIVING WATERS Black DJch + Sungtail Brook STREAM CLASS FW-1
LICENSED OPERATOR & PLANT CLASS
TRAINEE/ASSISTANT OTHER INFO. (201) 981-5000
DEFICIENCIES OR COMMENTS The report for the beaut + perimeter analysis
was sent to the Department on January 6,1885. They haven't
received a reply yet. (1) The limitation for 755 for
clischange 001 was exceeded. (2) The pH limitation for
discharge our was not met. (3) The limitation for acute
toxicity for Ocil was not met. (4) Discharge COZ also exceeded The texis
Torreity results for 002 were not reported the to high
matality in the acclimation. They will retest with
dilutron water from further upstream
OVERALL RATING Acceptable Conditionally Acceptable Unacceptable DSW
EVALUATOR Mauren Byrne TITLE Environmental Specialist
INFORMATION FURNISHED BY (Name) John A. Work
(Title) Myr. Environmental AlGairs (Organization) Nuclea Tre
·

1/2 //60

DATE OF INSPECTION 5/12/88

114



N.J.D.E.P. D.W.R.

DISCHARGE SURVEILLANCE REPORT

Page 2 of 3 (I) Permit #: A Toxonic

Date: 5117155

INDUSTRIAL TREATMENT PROCESS EVALUATION S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable RATING CODES: RATING COMMENTS DISCHARGE # ---DSN DOI DSN 002 WASTEWATER SOURCE(S) Stormuater Runoff CONTINUITY OF OPERATION Intermittent ... BYPASSES/OVERFLOWS NA S.P.C.C. PLAN NA ALARM SYSTEMS ALTERNATE POWER SUPPLY An traitment PROCESSES TREATMENT DISPOSAL SITE NA Mone generated FLOW METER & RECORDER weir massrement RECORDS S up to date SAMPLING PROCEDURES 5 As required ANALYSES PERFORMED BY COID TO# 1200.4 S INFORMATION OTHER FINAL EFFLUENT APPEARENCE 002-clear con-clear REC. WATERS APPEARENCE MI

DIVISION OF WATER RESOURCES CN 029, Trenton, N.J. 08625

Page 2 of 3 (G)

DISCHARGE SURVEILLANCE REPORT

Date _

Permit # NJ 000011

	GROUND WATER DISCHARGE EVALUATION							
RAT	ING CODES: S = Satisfactory M = Max		= Unsatisfactory . NA = Not Applicable					
		RATING	COMMENTS					
GENERAL	TYPE DGW	-	Intetration - Percolation lagons (two) closure					
	RCRA FACILITY	5	NJP0021841562					
	DISCHARGE NUMBER	NA	No discharge					
	WASTEWATER SOURCE/FREQ.	WA	No longer in approxim					
	PUMPS AND PIPING	MA						
	ALTERNATE POWER/ALARM							
	BYPASS							
1 1		 						
-	WATER SUPPLY/MONITORING		City water sooly					
3	AQUIFERS MONITORED		Maurithy and Region Foundans					
SYSTEM	UPGRADIENT WELLS	5	B-3 8-2, 18					
X	DOWNGRADIENT WELLS	5	26 down accidient wells					
S	SAMPLING PLAN	5	According to Demit					
Ž	SAMPLING PROCEDURES	3	· · · · · · · · · · · · · · · · · · ·					
8	LAB CERTIFICATION	_5	I.T. (no lubs IO# 12064					
MONITORING	RECORDS	5	Up to clair					
Z	REPORTING	5						
ΣĮ								
1	DRILLING PERMIT NUMBERS	5	Penni Had.					
_ ;;	WELLS NUMBERED/IDENTIFIED	5	Mumberd					
₩₹	LOCKS/INTEGRITY		locked .					
ᇤ	ABANDONMENT PLAN	NA						
폴롱	ELEVATION INFORMATION	5	Reported contrainsmitted					
	WATER LEVEL MEASUREMENT	5						
NOM	TURBIDITY FREE SUFFICIENT YIELD	3	sufficient					
	SUFFICIENT TIELD	 	SOFEICIENT					
	CLASSIFICATION	N:A	· · · · · · · · · · · · · · · · · · ·					
	PERC./LEACHING PROBLEMS							
2	SOLVENTS/REPAIRS MADE							
=	MAX, PRESSURE & VOLUME							
	CLOSEST USDW/SUPPLY WELLS							
	MOUND INTEGRITY/COVER	+						
5	LINING INTEGRITY	NA	No lines					
	EMBANKMENT INTEGRITY	5						
₫	LEACHATE COLLECTION SYS.	NA.						
3	SOLIDS BUILDUP/REMOVAL	5	Removed as per closure					
IMPOUNDMENT	HEIGHT TO FREEBOARD	2	above 2ft'					
∖≊ ¦	APPEARANCE	 						
	EVEN DISTRIBUTION	NA						
Z	PONDING/RUNOFF/EROSION	111						
ND APPLICATION/ SPRAY SYSTEM	SPRAY HEADS							
	DISCING							
	COVER CROP							
	APPEARANCE							
	BUFFER ZONE		·					
LAND	SLUDGE STOCKPILED	Ψ						
7	•							
OTHER	SEEPAGE/LEACHING	5	Mina chearved					
É	ODOR/AEROSOLS	M	Solvent odors present, possibly from off site					
0	FLOW MONITORING/RECORDING	NA.	None required					

NUODEX INC .
FORDS, NEW JERSEY

GENERAL INFORMATION & SITE EVALUATION SUBMISSIONS FOR THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APRIL 25, 1985

VOLUME 3 GROUND WATER QUALITY



165 Fieldcrest Ave. • CN 7809 • Edison, New Jersey 08818-7809 • (201) 225-2000

0

Investigation of Ground-Water Quality Conditions

Tenneco Chemicals, Inc. Fords, New Jersey

NOVEMBER 1982

GERAGHTY & MILLER, INC.

Consulting Ground-Water Geologists and Hydrologists

NORTH SHORE ATRIUM 6500 JERICHO TURNPIKE SYOSSET, NEW YORK 11791 INVESTIGATION OF GROUND-WATER

QUALITY CONDITIONS AT

TENNECO CHEMICALS, INC.

FORDS, NEW JERSEY

November 1982

Geraghty & Miller, Inc.
Consulting Ground-Water Geologists and Hydrologists
North Shore Atrium
6800 Jericho Turnpike
Syosset, New York 11791

Laboratory Results

Glossary of Terms

D.

E.

										<u>c</u>	ON	TE	NT:	5													Page
INT	RODUCTION	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	1
SUM	MARY	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•,	•	٠	•	•	•	•	2
HYD	ROGEOLOGY	•		•			•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	4
WAT	ER QUALITY	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	÷	•	•	•	•	•	•	6
. '	Ground-Water Migration of																									:	6 12
REF	EENCE		•		•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	14
										AP	PE	ND:	IC	<u>ES</u>		-											
Α.	Figures	٠.																									
в.	Tables																										
_	Field Investi					w.	. 1 1	1 1																			

INVESTIGATION OF GROUND-WATER

QUALITY CONDITIONS AT

TENNECO CHEMICALS, INC.

FORDS, NEW JERSEY

INTRODUCTION

Geraghty & Miller, Inc., was retained by Tenneco Chemicals, Inc., to investigate ground-water quality conditions at its facility in Fords, New Jersey. The purposes of the study were to characterize the nature and extent of contaminated ground water, attempt to determine whether contaminants are moving offsite and attempt to determine the sources of ground-water contaminants.

During the course of the study 16 wells were added to a 19 well monitoring well network which was installed in 1980 before Geraghty & Miller, Inc., became involved in the project. Figure 1 (Appendix A) shows the location of the monitoring wells and clusters. Except for Cluster 18 which contains three wells, the clusters contain a shallow well, designated with the suffixes "S" or "B" (see Table 1 in Appendix B) and a deep well designated with the suffixes "D" or "A". Tables containing water-level measurements, well construction data and summaries of analytical results are in Appendix B. Well construction procedures, sampling protocols and geologic logs of the newly constructed wells are included in Appendix C. Appendix D contains reports of analytical results from various laboratories. Appendix E is a glossary of terms.

SUMMARY

- 1. The analytical data indicate that ground water in the northern half of the Tenneco property is contaminated with organic compounds and also contains chlorides and sulfates. In general, the highest concentrations of contaminants were found at Clusters B2, B4, B6, B7, 46, 17, and 18.
- 2. The preponderance of water-quality data indicates that ground water in the upper 40 feet of the zone of saturation* in the southern half of the property is essentially uncontaminated, although low concentrations of organic compounds were occasionally found at a few locations (Clusters 85, 88, and 815).
- 3. At least two offsite sources appear to be responsible for some of the contamination in the ground-water system on the Tenneco property. Water-quality data from Clusters B2 and 18 indicate that a source of benzene, toluene, sulfate, and chloride is located northeast (upgradient) of Tenneco's property. Another offsite source of numerous organic compounds located west of the property, is indicated by the analytical data from Clusters B7 and 17. Some contaminants apparently originate on the Tenneco property itself, although the number of wells and clusters is not sufficient to attribute individual compounds or concentrations to specific onsite sources with any certainty.
- 4. While the areal extent of the northeastern plume is fairly well defined, the area of contamination in the northwestern quadrant of the property is uncertain because only two clusters are located there. Despite

^{*} Underlined terms are defined in the glossary included as Appendix E.

the uncertainties regarding contaminant flow paths, analytical data suggest that contaminated ground water is not migrating beyond the property boundaries in the two flow systems identified.

- 5. Salt-water intrusion from the Raritan River and saline water in the zone of diffusion appear to be responsible for the high concentrations of inorganic constituents found in the southern half of the property. Because of this, ground water in the unconsolidated deposits on the Tenneco property is not potable.
- 6. Two ground-water flow systems have been identified in the upper 40 feet of the geologic section. A <u>water-table zone</u> is separated from a shallow <u>artesian zone</u> by a thin confining layer composed of silty clay that ranges from about 1 to 5 feet in thickness. Ground water in both zones flows from north to south and discharges to the Raritan River. In addition to the horizontal components of flow, there are also vertical components of flow. Upward flow appears to take place in the northern third of the property while downward flow apparently occurs in the remainder of the site.

HYDROGEOLOGY

Two ground-water flow systems have been identified in the upper 30 to 40 feet of the geologic section. Figure 2 shows that water-table conditions prevail in a layer of interbedded fill, sand, loam, and clay which ranges from about 5 to 15 feet in thickness, depending on the location. The water-table zone is separated from a shallow artesian zone by a layer of clay or peat which ranges from 1 to 5 feet in thickness and acts as a confining layer. Both water-bearing zones are in the Farrington Sand which thickens from north to south and is estimated to be 40 to 75 feet thick depending on the location. Water quality conditions below 30 feet were not investigated during this study, although a few wells are between 30 and 40 feet deep (see Table 1).

The Raritan Fire Clay lies beneath the shallow artesian zone, at depths ranging from 40 to 75 feet below land surface, depending on the location. Geologic logs of four wells drilled on the Tenneco property between 1920 and 1934 indicate that the Raritan Fire Clay is 20 to 30 feet thick.

Below the unconsolidated beds, at a depth of approximately 75 feet, is the Brunswick Formation. This formation, characterized by highly fractured red shale interbedded with sandstone and siltstone, is an important <u>aquifer</u> in the area although its full potential is undeveloped.

Water-level measurements (see Tables 2 and 3) collected from wells tapping the water-table and artesian zones were used to prepare water-table

maps and potentiometric surface maps (Figures 3 through 6). Arrows on these figures indicate that ground water is moving in the direction of the hydraulic gradient and perpendicular to the equipotential lines which connect points of equal water-level elevation. The predominant flow direction is south, and ground water in both the water-table and artesian zones discharges into the Raritan River.

In addition to the lateral southward component of ground-water flow in the water-table and artesian zones, there is also a vertical component of flow between the two zones. Figure 2 shows that, from Cluster 19 to the sludge lagoons, there is about a 1.5- to 3-foot head difference (depending on location) between the water table and the potentiometric surface. Under these circumstances there is a downward head gradient across the confining layer, causing ground water to move downward. Although it is not shown on Figure 2, there is an upward component of flow in the vicinity of Clusters B2, 16 and 18. Comparisons of Figure 3 with Figure 5 and Figure 4 with Figure 6 show that the potentiometric surface is above the water table in the northeastern quadrant of the property. The upward gradient measured in the northeastern quadrant of the property may indicate an upward gradient over all of the northern third of the plant site. However, additional studies are necessary to determine if, in fact, this is the case.

The magnitude of vertical leakage between the water-table and artesian zones as compared to the lateral flow in either one should be small because the hydraulic conductivity of the confining layer is probably several orders of magnitude lower than the hydraulic conductivity above and below it.

1

1.

I.

H

Ė

L

E

WATER QUALITY

Water samples collected from monitoring wells were analyzed for inorganic, volatile organic, pesticide, and acid extractable compounds to determine their distributions in the ground-water system. During the first sampling round in January 1982, samples were obtained from almost all of the wells while selected wells were resampled in April and June 1982 to confirm the analytical results of the first round. The analytical data collected in 1982 is presented in Tables 4 and 5. All of the analytical work (except for pH and specific conductance) was done by Mead Compuchem, Research Triangle Park, North Carolina, and their analytical protocols have been provided in Appendix D.

The distribution of selected compounds and ions are shown in Figures 7 through 14. Tables 6 through 13 summarize all of the water-quality data obtained by others during previous studies conducted before 1982. Geraghty & Miller, Inc., selected only the data in Table 4 for preparing Figures 7 through 14, however, because it is current. The 1982 data is probably the most reliable because the analytical work was done with GC/MS (gas chromatography/mass spectrometer) techniques whereas the previous analyses were done with GC only, except for three analyses on March 1981 samples from Wells 4, 75, and 7D which were analyzed by Princeton Aqua Science with GC/MS equipment (see Appendix D).

Ground-Water Contamination

The analytical data indicate that ground water in the northern half of

the property is contaminated with both organic and inorganic compounds. In general the highest concentrations were found at Clusters B2, B6, B7, 17, and 18, and in Well 4.

Figures 7 through 10 show the distributions of benzene and toluene in the water-table and artesian zones. These two compounds were chosen as indicators of ground-water contamination because they are widely used. In addition, of all volatile organic compounds detected, they appeared most frequently in the analytical results. High concentrations of benzene and toluene were usually accompanied by other organics. For example, at Cluster 7 where toluene and benzene appeared in the shallow and deep wells, carbon tetrachloride, chlorobenzene, chloroform, methylene chloride and tetrachloroethylene, among others, were also detected (see Table 4 and Appendix D). To a lesser extent other organics were associated with benzene and toluene at Well B4, Clusters 6, 17, 18, 21 and 22. In general, where organic compounds were detected, concentrations were higher in the deep wells than in the shallow wells. This is true of Clusters 2, 6, 7, 17, 18, 21, and 22 (see Figures 7 through 14).

The occurrence and distribution of organic compounds indicates the existence of at least two offsite sources. Onsite handling, use and disposal of organic compounds also appear to be responsible for the presence of some compounds in the ground-water system, although the available water quality data are too widely scattered to attribute occurrences of individual compounds to particular sources with certainty. For example, it is impossible to determine how much of the organic contamination in the vicinity of Well

4 is attributable to the offsite source to the northeast and how much to onsite sources such as the landfill area which is upgradient.

Most of the benzene identified in the northeastern quadrant of the property has apparently originated from an offsite source to the northeast. While there is insufficient data to define the limits of benzene contamination in the water-table zone in the northeastern quadrant of the property, there is a definable "plume" in the shallow artesian zone (see Figure 8). Concentrations in the plume are highest at Clusters B2 and 18 which are hydraulically upgradient from any possible source on the Tenneco property. This indicates that most of the benzene in the northeastern quadrant originates offsite and possibly on a property north of Industrial Avenue where chemicals were reportedly stored, used and disposed of.

The sources of other organic compounds such as toluene, chlorotoluene, chlorobenzene, and formaldehyde detected in wells in the northeast quarter of the property are likely onsite, although Tenneco has reportedly never used or produced chlorobenzene onsite. Toluene concentrations appear to increase in a downgradient direction from the northern property boundary (Clusters B2, 16 and 18) which indicates that there is a source between the northern property boundary and Wells B4 and B9, possibly the "landfill area" shown in Figures 1-14. However, some toluene was detected at Clusters B2 and 18 which indicates that the offsite benzene source is also contributing some toluene. Chlorobenzene, which was not detected in clusters on the northern property boundary, was detected in Well B4 which suggests a source between Industrial Avenue and Well 4, possibly the "landfill area"

just north of the pond near Cluster 16 (see Figures 1-14). Conclusions regarding the sources of chlorotoluene and formaldehyde are a little more tenuous because analyses for these compounds were not done on the upgradient Clusters 16 and 18.

The occurrence of organic compounds in Clusters (87 and 17) in the northwestern quadrant of the property also suggests an offsite organics source to the west of Tenneco's property. Benzene, toluene, chlorotoluene, carbon tetrachloride, chloroform, chlorobenzene, ethylbenzene, ← , ← , ← trifluorotoluene, tertiary butyl benzene and hexachlorobutadiene, among others were detected in one or both of the clusters (see Table 4 and Appendix D). Many of these compounds including benzene, ethylbenzene, tertiary butyl benzene, and hexachlorobutadiene were reportedly never produced or used in Tenneco's western production area. Although some of the other compounds were reportedly made or used, their highest concentrations were found in the shallow artesian aguifer which suggests that they entered the ground-water system at some distance from Tenneco's property rather than from an onsite source. If an onsite source were responsible, the compounds used or produced onsite would more likely appear at the highest concentration in the water-table zone especially because the production processes were discontinued only four years ago.

An impoundment basin and a drum disposal area were reported by Tenneco personnel to have been operated on the neighboring property to the west (see Figure 1). Although Clusters B7 and 17 are not immediately downgradient of these old facilities (one was reportedly closed in 1975 and the

other in 1979 or 1980), contaminants migrating away from them in a radial ground-water flow pattern caused by a "mound" in the water table or potentiometric surface could have reached Clusters B7 and 17. Without water quality and water-level data from the monitoring wells on the neighboring property, however, it is impossible to determine the precise impact of the old waste disposal facilities on the ground-water system.

The low concentrations (less than about 50 ug/L) of toluene and benzene found at Cluster 8 and in Well B15 are probably related to the old waste disposal facilities on the neighboring property. These wells are downgradient of these old facilities and there are no other apparent sources of the compounds in the immediate vicinity of these wells.

Based on the analytical data obtained so far, the sludge from the lagoons does not appear to contribute organic compounds to the ground-water system. Organic compounds could not be detected in the January or April 1982 samples collected from the shallow wells in the immediate vicinity of the lagoons (see Table 4). The organic compounds in the wells tapping the artesian zone appear to be part of the plume emanating from the northeast but do not appear to have originated in the sludge lagoons.

Like the sludge in the lagoons, the sludge in the "sludge disposal area" (see Figures 7 through 14), which was deposited there after having been removed from the lagoons, appears to have little impact on the ground-water system. The January and April 1982 samples indicated the presence of organic compounds in only one of the clusters (85) in the southeast quadrant of the plant property. Most of the pre-1982 analytical results of

\)'\

samples from Cluster 85 indicate that organic compounds (except formaldehyde) are present at concentrations less than about 100 ug/L. Samples collected during 1982 from Cluster 85 confirm this assertion. Chlorobenzene and dichlorobenzenes were found to be present at high concentrations in one sample from Well 814 (see Table 6 and Appendix D) but these levels could not be confirmed in the subsequent samples collected in 1982.

Figures 11 through 14 show that chloride and sulfate concentrations decrease in both the water-table and shallow artesian zones from the Raritan River toward the center of the plant property. On the banks of the Raritan River the concentrations of both ions indicate that saline water is present in the geologic formations. The landward decrease in concentrations may indicate that salt-water intrusion is or was occurring as a result of pumpage (Geraghty & Miller, Inc., 1976). Such distributions of saline water are also characteristic of a zone of diffusion between fresh and salty ground water. Because of its high salinity, ground water in the unconsolidated sediments on Tenneco's property is not of potable quality.

The analytical data for chloride appear to confirm the conclusion drawn from the organic compound data that two offsite sources are contributing contaminants to the ground water system on Tenneco's property. Between Clusters 88 and 87 concentrations of chloride (see Figures 11 and 12) increases and then decreases which is suggestive of a source (or sources) located to the west of Cluster 17. Tenneco reportedly produced hydrochloric acid which is a potential source of chloride in the vicinity of Cluster 87, but the chloride concentration is higher in the deep wells of both Clusters

erse if the source was located on . Moreover, the field pH values 17 were above 6 (except for B7D contamination by an acid. There tions in an upgradient direction which is also suggestive of the f the Tenneco property.

in the ground-water system folfate concentrations in Cluster 16 ed ground-water whereas the low ers may be representative of natwhich suggests that the sources y of these clusters, the sulfate nce of two offsite sources. Calto be responsible for the relain monitoring clusters near the

that ground-water contaminants and western property boundaries not discharging to the Raritan re are no ground-water quality . B15 because of the extremely ept for formaldehyde in Well

aminants are low in Wells 81, 85, 18, 19, and 20. Without additional ne it is not possible to define the is affected by formaldehyde.

ate that contaminants from offsite y to the ground-water contamination may be possible to use water-level and ells on neighboring properties to the fsite sources are contributing grounder system on Tenneco's property.

Respectfully submitted,

GERAGHTY & MILLER, INC.

Nicholas Valkenburg Senior Scientist

Christopher Creed / Staff Scientist

Man J. Tecolon

William J. Seevers Vice President

REFERENCE

Geraghty & Miller, Inc., 1976, Lower Raritan/Middlesex County 208 Water Quality Management Planning Program, Ground-Water Analysis (Task 8).

Table 4. (Continued)

Well	Date Sampled	1,3-Di- chloro- propy- lene (ug/L)	Ethyl- ben- zene (ug/L)	Methy- lene- chlo- ride (ug/L)	1,1,2,2- Tetra- chloro- ethane (ug/L)	Tetra- chloro- ethy- lene (ug/L)	Tri- chloro- ethy- lene (ug/L)	1,2- Trans- dichloro- ethylene (ug/L)
16A	1-20-82	*	*	*	*	*	*	*
, 0, ,	4-22-82	*	*	*	*	*	*	*
16B	1-20-82	*	*	*	*	*	*	*
	4-22-82	*	*	22	*	*	*	*
17A	1-20-82	*	14	38	*	*	22	26
	4-22-82	*	*	15	* 1	*	13	15
17B	1-20-82	*	*	*	*	*	*	12
	4-22-82	*	*	73	*	. *	*	10
18A	1-20-82	*	*	*	*	*	*	*
	4-22-82	*	*	14	*	*	* ,	*
18B	1-20-82	*	*	*	*	*	* *	*
	4-22-82	*	*	25	*	*	*	, *
18C	1-20-82	*	*	*	*	*	*	**
	4-22-82	*	*	*	*	*	*	* ,
19A	1-21-82	*	*	*	*	*	*	*
	4-22-82	*	*	*	*	*	*	*
19B	1-21-82	*	*	*	*	*	*	*
•	4-22-82	*	*	*	*	*	*	*
20A	1-21-82	*	* *	*	*	*	*	*
	4-22-82	*	*.	*	*	* *	*	*
208	1-21-82	*	*	*	*	*	*	*
	4-22-82	*	*	16	*	*	*	*
21A	1-22-82	*	29.	*	*	*	*	*
	4-22-82	*	150	34	*	*	*	*
21B	1-25-82	*	*	. *	*	*	*	*
	4-22-82	*	#	11	*	*	*	*
22A	1-24-82	*	140	*	*	*	*	*
	4-22-82	* *	500	12	*	*	*	*
22B	1-21-82	* .	*	*	*	*	*	* '
	4-22-82	*	*	10	*	*	*	*
23	4-21-82	-	-	-	- -	-	-	, -

^{*} Below detection limit

⁻ Not analyzed

Table 4. (Continued)

Well	Date Sampled	Phenol (ug/L)	2,4-Di- chloro- phenol (ug/L)	2,4,6- Tri- chloro- phenol (ug/L)	p- chloro- m- cresol (ug/L)	2,4-Di- methyl- phenol (ug/L)	2- chloro- phenol (ug/L)	PCBs (ug/L)
B1	1-19-82	*	*	*	*	*	*	*
B2S B2D	1-20-82 1-20-82	*	*	*	*	*	*	*
В3	1-21-82	*	*	*	. *	*	*	-
B4	1-19-82	* .	. *	*	37	*	*	*,
B5S B5D	1-21-82 1-21-82	*	* *	*	*	* .	*	31.7 *
B6S B6D	1-22-82	* -	* -	* -	* -	* -	* -	- :
B7S B7D	1-19-82 1-19-82	* 47	45 60	110 140	*	*	*	*
B8S B8D	6-25-82 6-25-82	*	*	*	*	*	*	*
В9	1-19-82	*	*	*	*	*	*	*
B10A	1-19-82	*	*	*	*	*	*	*
B11	1-19-82	*	*	*	*	. *	*	*
B12-Part 1 B12-Part 2 B12-Part 3 B12-Part 4	1-25-82 1-21-82 1-21-82 1-21-82	* * *	* * *	* * *	35 38 28 *	*	*	- - - -
B13	1-19-82	*	*	•	*	•	. *	* .
B14	1-21-82	*	* '.	*	*	* -	*	*
B15	6-25-82	*	*	*	*	*	*	. *

^{*} Below detection limit - Not analyzed

Table 4. (Continued)

Well	Date Sampled	Phenol (ug/L)	2,4-Di- chloro- phenol (ug/L)	2,4,6- Tri- chloro- phenol (ug/L)	p- chloro- m- cresol (ug/L)	2,4-Di- methyl- phenol (ug/L)	2- chloro- phenol (ug/L)	PCBs (ug/L)
16A	1-20-82	*	*	* .	*	*	*	*
10/1	4-22-82	_	_		-	-	_	-
16B	1-20-82	*	*	*	*	*	· *	*
	4-22-82	-	-	-	-	-	· •	-
17A	1-20-82	3,500	300	30	46	9,900	140	*
	4-22-82	_	-	-		_	-	· <u>-</u>
17B	1-20-82	* *	*	*	*	*	*	*
	4-22-82	-	-	-	-	-	-	
18A	1-20-82	*	*	*	*	*	*	*
	4-22-82	-	-	-	-	-	-	-
18B	1-20-82	* ,	*	*	*	# ,	*	*
	4-22-82	_	-	•	-	-	-	- '
18C	1-20-82	*	*	*	*	*	-★	*
•	4-22-82	· -	-	-	━,	-	-	-
19A	1-21-82	*	*	*	*	*	*	*
	4-22-82	-	-	-	-	-	-	-
19B	1-21-82	*	*	*	*	*	*	•
	4-22-82	-	•	•	-		-	-
20A	1-21-82	*	*	*	*	*	*	-
	4-22-82		-		-	, –	-	-
20B	1-21-82	*	*	*	*	*	*	22.9
	4-22-82	-	-	-		-	-	-
21A	1-22-82	*	* .	*	*	*	*	5.69
	4-22-82	-	-	- 4	-	-	-	-
21B	1-25-82	*	*	*	*.	*	*	- '
	4-22-82	-			-	-	-	-
22A	1-24-82	*	*	*	*	26 .	•	5.07
	4-22-82	-	-	-	_	-	-	-
22B	1-21-82	*	*	*	*	*	*	-
٠.	4-22-82	•	-	-	-		· -	-
23	4-21-82	-	-	-	-	-	-	

^{*} Below detection limit - Not analyzed

Table 4. (Continued)

Well	Date Sampled	Pesti- cides (ug/L)	Chloride (mg/L)	Fluo- ride (mg/L)	Nitrate- nitrite nitrogen (mg/L)	Sulfate (mg/L)	Iron (mg/L)	Mag- nesium (mg/L)
B1	1-19-82	*	55	-	. •	4.5	-	-
B2S B2D	1-20-82 1-20-82	*	485 717	-	<u>-</u>	965 2 , 090	- -	-
В3	1-21-82	-	25.3	-		154	-	-
84	1-19-82	*	235		-	2.9	-	-
B5S B5D	1-21-82 1-21-82	*	961 9,130	-	- -	152 513	<u>-</u>	
B6S B6D	1-22-82	* -	188	0.41	0.25	1,160 -	17	64
B7S B7D	1-19-82 1-19-82	*	275 682	-	- ·	150 162	<u>-</u>	<u>-</u>
B8S B8D	6-25-82 6-25-82	* -	194 726	<u>-</u>	- -	633 270	-	- -
В9	1-19-82	*	146	-	-	210	-	-
B10A	1-19-82	*	294	-	-	16.5	-	-
B11	1-19-82	*	44.3	-		144	-	-
B12-Part 1 B12-Part 2 B12-Part 3 B12-Part 4	1-25-82 1-21-82 1-21-82 1-21-82	-	292 - - -	0.24 - -	0.07 - - -	73.1 - -	8.60 - -	14.80 - -
B13	1-19-82	*	82.5	-	-	7	-	-
B14	1-21-82	. *	3,280	-	÷	505	-	-
B15	6-25-82	*	1,640	-	-	753	-	-

^{*} Below detection limitNot analyzed

Table 4. (Continued)

Well	Date Sampled	Pesti- cides (ug/L)	Chloride (mg/L)	Fluo- ride (mg/L)	Nitrate- nitrite nitrogen (mg/L)	Sulfate (mg/L)	Iron (mg/L)	Mag- nesium (mg/L)
16A	1-20-82	* ;	44.8		•	2,330	_	
	4-22-82	-	-	-	· -	-	-	_
16B	1-20-82	*	31.9	-	-	49.2	-	-
	4-22-82	-	· -	- ·	· -	-	-	
17A	1-20-82	*	795	-	-	102	_	
	4-22-82	-		-	-	-	-	-
178	1-20-82	*	437	-	_	33.6	_	-
	4-22-82	-	-	-	-	-	-	-
18A	1-20-82	*	336	_	· _	306	_	_
	4-22-82	-	-	_	-	-	-	-
18B	1-20-82	* ,	333	-	-	466	-	-
-	4-22-82	-	_	-		-	-	-
18C	1-20-82	*	618	_	-	1,570	_	
	4-22-82	-	•	-	-	-	-	-
19A	1-21-82	*	4,720	-	-	478	· _	_
	4-22-82	-	· -		-		-	_
19B	1-21-82	. *	3,230	-	-	971	-	_
	4-22-82	-	· -	-	• • .	-	-	- .
20A	1-21-82	_	2,190	_	-	373	-	_
	4-22-82		-	_	•	_	- ,	_
20B	1-21-82	-	79 0	-	-	1,160	_`	_
	4-22-82	-	-	-	-	-	-	-
21A	1-22-82	*	555		-	689	. -	-
	4-22-82	-	- ,	-	. -	-	_	-
21B	1-25-82	-	233	0.30	4.04	726	25.2	39.6
	4-22-82	-	-	-	-	-	-	-
22A	1-24-82	*	965	_	-	53.8	<u>.</u>	-
	4-22-82	- ,	-	-		_	-	
22B	1-21-82	-	164	0.49	1.43	339	22.6	19.6
	4-22-82	*	-	-	•	•	•	•
23	4-21-82	*	171	0.29	*.	64.3	0.29	0.103

^{*} Below detection limit - Not analyzed

Table 4. (Continued)

Well	Date Sampled	Sodium (mg/L)	Arsenic (ug/L)	Phenols (ug/L)	Turbidity (NTU)	Total Organic Halides as Cl (ug/L)	Total Organic Carbon (mg/L)
B1	1-19-82	-		-	-	-	-
B2S B2D	1-20-82 1-20-82	-	. <u>-</u>	. -	-	-	- -
В3	1-21-82	- .	-	-	-	-	-
B4 ·	1-19-82	-	- ,	-		.	-
B5S B5D	1-21-82 1-21-82	-	- -	- -	. <u>-</u>	· -	<u>.</u> .
B6S B6D	1-22-82	248	34.1	72.5	8.9	• -	. -
B75 B7D	1-19-82 1-19-82	. -	- ;	- -	:	-	-
885 88D	6-25-82 6-25-82	- -	-	- -	-	- -	- -
В9	1-19-82	-	-	-	-	-	-
B10A	1-19-82	, -	- ·	-	-	-	-
B11	1-19-82	-	-	,	-	-	-
B12-Part 1 B12-Part 2 B12-Part 3 B12-Part 4	1-25-82 1-21-82 1-21-82 1-21-82	236	2.7 - -	79 - -	5.1 - -	574 11 630	- 68.7 71 69.1
B13	1-19-82	-	_	-	-	-	-
B14	1-21-82	-	· _	-	-	-	-
B15	6-25-82	-	_	· _	-	-	-

^{*} Below detection limit - Not analyzed

<u>Table 4.</u> (Continued)

Well	Date Sampled	Sodium (mg/L)	Arsenic (ug/L)	Phenols (ug/L)	Turbidity (NTU)	Total Organic Halides as Cl (ug/L)	Total Organic Carbon (mg/L)
16A	1-20-82	_	_	_	_		_
TON	4-22-82	_	 _	_	_	· -	_
16B	1-20-82	-	-	-	-	-	_
.00	4-22-82	-	-		-	-	-
17A	1-20-82	-	-	_	-		_
• • • • • • • • • • • • • • • • • • • •	4-22-82		-	-	-	_	-
17B	1-20-82	-	_	-	·	_	-
	4-22-82	· -		-	-	-	-
18A	1-20-82	_	-	-	•	-	·_
	4-22-82	-	-	-	-		-
18B	1-20-82	_	_	_	-	_	-
	4-22-82	-	_	-	-	-	_
18C	1-20-82	_	-	_	_ '	_	-
	4-22-82	-	-	-	-	-	-
19A	1-21-82	_	_	_		-	_
	4-22-82	_	-	-		-	_
19B	1-21-82		_	-	-	-	
. ,	4-22-82	-	-	-	-	-	-
20A	1-21-82	_	_		-		
	4-22-82		-	-	-	_	_
208	1-21-82	-	_	-	-	_	-
	4-22-82	-	-	-	-	-	•
21A	1-22-82	_		_	_		_
	4-22-82	-	-	_	-	-	
21B	1-25-82	192	15	39.8	5.5	-	-
	4-22-82	-	-	-	-	-	-
22A	1-24-82	_	_			_	·
	4-22-82	-	_	_	_	-	-
22B	1-21-82	116	14.7	21.1	6.0	-	-
	4-22-82	-		-	-	-	-
23	4-21-82	109	*	32.5	130	824	4.5

^{*} Below detection limit - Not analyzed

<u>Table 1.</u> Inventory of Monitoring Wells* Located on Tenneco Chemicals Property, Fords, New Jersey (well locations shown on Figure 1).

Well	Permit No.	Year Completed	Depth (feet below land surface)	Casing Diameter (inches)	Screen Setting (feet below land surface)
B 1 B 25 B 2D B 3 B 4 B 5S B 5D B 6S B 6D B 7S B 7D B 8S B 8D B 9 B10A	-	1979 1979 1979 1979 1979 1979 1979 1979	25 15 35 23 25 15 36 13 24 15 39 15 42 25	1.5 1.5 4.0 1.5 1.5 3.0 4.0 3.0 1.5 4.0 4.0 4.0	8 - 25 10 - 15 20 - 35 13 - 23 16 - 25 10 - 15 28 - 36 4 - 13 16 - 24 8.5 - 15 20 - 39 10 - 15 24 - 42 5 - 25 19 - 29
B11 B12 B13 B14 B15	- 26-4875 26-4874 26-4876 26-4877	1979 1980 1980 1980 1980	17 25 30 34 45	3.0 3.0 3.0 3.0 3.0	7 - 17 15 - 25 20 - 30 24 - 34 35 - 45
16A 16B 17A 17B 18A 18B 18C 19A 19B 20A 20B	26-5393 26-5394 26-5395 26-5396 26-5397 26-5448 26-5399 26-5400 26-5401 26-5402	1981 1981 1981 1981 1981 1981 1981 1981	30.5 13 31 15 25.5 13 40 30 15 30.5	1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	20.5 - 30.5 3 - 13 21 - 31 5 - 15 20 - 25.5 3 - 13 30 - 40 20 - 30 5 - 15 20.5 - 30.5 3 - 13
21A 21B 22A 22B 23	26-5403 26-5404 26-5405 26-5406 26-5573	1982 1982 1982 1982 1982	21.5 7 23 8 15	1.5 1.5 1.5 1.5	11.5 - 21.5 2 - 7 13 - 23 3 - 8 5 - 15

^{*} All observation wells on Tenneco property tap the Farrington Sand member of the Raritan Formation.

NUODEX INC. FORDS, NEW JERSEY

RESULTS OF SAMPLING & ANALYSIS PLAN FOR COMPLIANCE WITH THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA) Areas C, N, R

MARCH 3, 1986

PRINCETON AQUA SCIENCE

165 Fieldcrest Avenue • CN 7809 • Edison, New Jersey 08818-7809 • Telephone (201) 225-2000

pa=

PAS is a wholly owned subsidiary of the INTERNATIONAL TECHNOLOGY CORP.



Nuodex Inc. Fords, New Jersey

RESULTS OF SAMPLING AND ANALYSIS PLAN FOR COMPLIANCE WITH THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

Table of Contents

		Page
	of Tables of Figures	iii V
1.0	General Introduction	1
	1.1 INTRODUCTION 1.2 HISTORY OF FACILITY ECRA COMPLIANCE 1.3 SUMMARY	1 1 4
2.0	DATA COLLECTION ACTIVITIES	11
	2.1 SOIL SAMPLING METHODOLOGIES 2.2 MONITORING WELL INSTALLATION 2.3 MONITORING WELL SAMPLING 2.4 MONITORING WELL SURVEY 2.5 GUIDELINES FOR DATA REVIEW	11 12 15 16 16
3.0	RESULTS OF INVESTIGATION	20
	3.1 HYDROGEOLOGY 3.2 SOIL ANALYTICAL RESULTS SUMMARY 3.3 GROUND WATER ANALYTICAL RESULTS SUMMARY	20 22 42
4.0	SUMMARY OF FINDINGS	52
Table	4.1 CONCLUSIONS	52
Figu	res	
Attac	chment A - ECRA Sampling and Analysis Plan and Additional Correspondencies	
Atta	chment B - Monitoring Well Logs, Well Construction Diagrams and Well Sampling Field Logs	

Nuodex Inc. Fords, New Jersey

RESULTS OF SAMPLING AND ANALYSIS PLAN FOR COMPLIANCE WITH THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

Table of Contents

(Continued)

- Attachment C Soil Analytical Results as per Laboratory
 Data Sheets
- Attachment D Ground Water Analytical Results as per Laboratory Data Sheets
- Attachment E Quality Assurance and Quality Control
 Documentation Soils Analysis, Volumes
 1 through 8
- Attachment F Quality Assurance and Quality Control Documentation, Ground Water Analysis, Volumes 1 through 3

List of Tables

Table	Title
1	Summary of Soil Sample Collection
2	Summary of Ground Water Sample Collection
3	Water Level Elevation Data
4	Summary of Soil Sample Analytical Results - Area A
5	Summary of Soil Sample Analytical Results - Area B
6	Summary of Soil Sample Analytical Results - Area D
7	Summary of Soil Sample Analytical Results - Area E
8	Summary of Soil Sample Analytical Results, - Area F
9	Summary of Soil Sample Analytical Results - Area G
10	Summary of Soil Sample Analytical Results - Area H
11	Summary of Soil Sample Analytical Results - Area I
12	Summary of Soil Sample Analytical Results - Area J
13	Summary of Soil Sample Analytical Results - Area K
14	Summary of Soil Sample Analytical Results - Area L
15	Summary of Soil Sample Analytical Results - Area M
16	Summary of Soil Sample Analytical Results - Area O

List of Tables

Summary of Soil Sample Analytical

Summary of Soil Sample Analytical

Summary of Soil Sample Analytical

Results Area Q

Comparison of Sample Results with

Comparison of Sample Results For Heavy

Metals Area Q

Metals Area Q

Summary of Ground Water Analytical

Summary of Ground Water Analytical

Results Ground Water Analytical

Summary of Ground Water Analytical

Summary of Ground Water Analytical

Summary of Ground Water Analytical

Summary of Ground Water Analytical

Summary of Ground Water Analytical Schedule

Pi1=

List of Figures

Table	Title
1	Sampling Plan Map
2	Geologic Cross-section A-A'
3	Geologic Cross-section B-B'
4	Ground Water Contour Map Shallow Wells 12/3/85
5	Ground Water Contour Map Deep Wells 12/3/85
6	Ground Water Contour Map Shallow Wells 12/9/85
7	Ground Water Contour Map Deep Wells 12/9/85
8	Ground Water Contour Map Shallow Map 12/17/85
9	Ground Water Contour Map Deep Wells 12/17/85
10	Summary of Inorganic Concentration in Soil
11	Summary of Organic Concentration in Soil
12	Ground Water Concentration Distribution Diagram - Benzene, Shallow Wells
13	Ground Water Concentration Distribution Diagram - Benzene, Deep Wells
14	Ground Water Concentration Distribution Diagram - Toluene, Shallow Wells
15	Ground Water Concentration Distribution Diagram - Toluene, Deep Wells
16	Ground Water Concentration Distribution Diagram - Chlorobenzene, Shallow Wells
17	Ground Water Concentration Distribution Diagram - Chlorobenzene, Deep Wells

List of Figures

(Continued)

<u>Table</u>	Title
18	Ground Water Concentration Distribution Diagram - Chlorotoluene, Shallow Wells
19	Ground Water Concentration Distribution Diagram - Chlorotoluene Deep Wells
20	Ground Water Concentration Distribution Diagram - Xylene, Shallow Wells
21	Ground Water Concentration Distribution Diagram - Xylene, Deep Wells
22	Ground Water Concentration Distribution Diagram - Benzoic Acid, Shallow Wells
23	Ground Water Concentration Distribution Diagram - Benzoic Acid, Deep Wells
24	Ground Water Concentration Distribution Diagram - Chloroform, Shallow Wells
25	Ground Water Concentration Distribution Diagram - Chloroform, Deep Wells

1.0 GENERAL INTRODUCTION

1.1 INTRODUCTION

This document presents the results of sampling and analysis performed at the Nuodex Inc. facility in Fords, New Jersey. This project was conducted in accordance with the "Sampling and Analysis Plan for the Environmental Cleanup Responsibility Act (ECRA)" submitted June 11, 1985, and subsequent revisions.

The primary areas of concern addressed by the Plan were the general process and on-site disposal areas at the facility. Additional shallow and deep monitoring wells were installed to assess the impact of possible contamination of ground water at the facility. In addition, surface soil sampling was conducted in areas of the facility suspected of possible production-related contamination.

1.2 HISTORY OF FACILITY ECRA SAMPLING COMPLIANCE

On June 11, 1985 an initial proposal "Sampling and Analysis Plan for the Environmental Cleanup Responsibility Act (ECRA)" was submitted to the Bureau of Industrial Site Evaluation (BISE). The Plan addressed the areas of potential environmental concern identified in previous site inspections conducted by Princeton Aqua Science a wholly-owned subsidiary of International Technologies (PAS/IT). It was designed in conjunction with the Site Evaluation Submission (SES) also compiled by PAS.

PE

The first of two facility inspections was conducted by the New Jersey Department of Environmental Protection (NJDEP) on July 16, 1985. In addition to representatives of Nuodex and PAS, the NJDEP personnel included Vincent Nykiel from BISE and Phil Sandine from the Bureau of Environmental Evaluation and Risk Assessment. Production areas and facility boundaries were reviewed with NJDEP personnel to familiarize them with the site.

On August 5, 1985, the second inspection was conducted involving Nuodex staff, PAS/IT personnel and Vincent Nykiel, Joseph Goliszewski, and Phil Sandine of NJDEP. The primary objective relative to the Nuodex Inc. facility was inspection of interior and exterior production areas.

The BISE "Report of Inspection" was issued on September 2, 1985. It contained a review of inspection findings and deficiencies and actions required on the part of the applicant. Additional monitoring wells and details of required ground water analysis was requested by NJDEP to be included in the Sampling and Analysis Plan.

On September 19, 1985 NJDEP, Nuodex, and PAS/IT personnel met in Trenton, New Jersey to review the requirements of the September 2, 1985 letter from BISE and finalize proposals for an acceptable Sampling and Analysis Plan. A separate meeting was conducted with

NJDEP, Nuodex, PAS/IT, Sherwin Williams, and personnel from Earth Technologies to stress the department's interest in dealing with the regional ground water problem in the Fords, New Jersey area.

On September 29, 1985, additional BISE comments on the Sampling and Analysis Plan were issued. Requested changes proposals discussed at the September 19, 1985 meeting and involved the installation of a number of stainless steel wells.

Final revision of the Sampling and Analysis Plan was submitted to BISE on October 3, 1985. On December 2, 1985, BISE formally approved the Sampling and Analysis Plan. Based on the April 29, 1985 Administrative Consent Order, the results of the Sampling Plan are due to NJDEP within 90 days of receipt of the December 2, 1985 letter. This document fulfills the data reporting obligation.

Monitoring well installation was performed during October and November 1985. Collection of soil samples was executed with permission of the BISE during October, November, and December 1985 and January 1986. Sampling of the monitoring wells took place during December 1985, and this sampling event was also used to fulfill the postponed NJPDES quarterly sampling.

Copies of the Sampling and Analysis Plans with pertinant correspondence are included in Attachment A.

1.3 SUMMARY

1.3.1 Introduction

The results of the implementation of the Sampling and Analysis Plan are summarized below:

1.3.2 Soil Sediment Quality

- o The lake sediments contained levels of arsenic, copper, and lead with West Lake also containing MEK and chlorotoluene and Hartmann's Pond containing toluene and benzaldhyde/benzoic acid. Arsenic concentrations range from 47 to 190 ppm, copper concentrations range from 100 to 6,000 ppm, and lead concentrations range from 110 to 3,900 ppm in the lake sediments. Chlorotoluene levels in West Lake were detected at 10 and 86 ppm. MEK was also detected in West Lake at 4.5 to 32 ppm. Benzaldhyde/benzoic acid levels in Hartmann's Pond range from 282 to 4,150 ppm, while toluene is detected at 27 to 170 ppm.
- o Soil around the drum storage pad (Area K, building 60) and old production areas (Areas L and J) contained varying amounts of compounds in the 100 ppm to 1,000 ppm concentration range. Area K soil was found to contain toxaphene and chlorotoluene isomers. Soil from Area J, an old production area, was found to contain

chlorotoluene isomers, benzaldhyde, copper and lead. Area L, an old production area which included storage tanks, was found to contain toluene, chlorobenzene, arsenic, copper, and lead. PCBs, in the thousands of ppm, were detected in soils collected adjacent to a transformer in Area L. Samples collected next to storage tanks indicate the presence of chlorotoluene in the soil adjacent to two of the tanks in the bermed areas and strobane in the soil next to the strobane storage tank.

- o Locations in Area G and Area I indicated the presence of chlorotoluene. Samples G7 and G8 indicated dichlorotoluene at less than 5 ppm adjacent to Building 49, while sample I7 contained 13.5 ppm of mono and dichlorotoluene isomers next to an outside storage tank. Xylene was also detected (23 ppm) in I3-4 next to production facilities. Individual Area G samples also indicated concentrations of lead, copper, petroleum hydrocarbons, and base neutral compounds.
- o Areas of non-vegetative growth were found to contain varying levels of copper and lead with two of the areas also containing arsenic. Arsenic values ranged from 5.7 to 150 ppm, copper values ranged from 170 to 520 ppm and lead concentrations ranged from 170 to 450 ppm. These concentrations of heavy metals offer an explanation for the absence of plant life in these tracts.

- o In Area D, sample D2 contained phthalate ester levels of 13 ppm while D1 contained 0.44 phthalates and D3, taken at an eight to ten foot depth, contained 1.8 ppm. This area is adjacent to Hatco Chemical with sample D2 closest to the neighboring facility.
- o Samples collected in Area P, adjacent to past operations by Ashland Chemical, indicate the presence of arsenic, copper, and lead. The analysis does not necessarily indicate trends with highest concentrations closer to the property line, but this trend would be dependent on sample placement and the amount of time the materials may have been leaching from Ashland's property. Arsenic levels ranged from 76 to 240 ppm, copper values ranged from 247 to 474 ppm, and lead values were from 291 to 535 ppm. Cadmium was detected at 16 and 18 ppm in samples closest to the property line, but non-detectable in other samples.
- o The sludge disposal area samples indicate the presence of arsenic, copper, and lead. Arsenic levels range from 36 to 170 ppm; copper values range from 36 to 470 ppm; and lead values range from 29 to 340 ppm.

1.3.3 Ground Water Quality

o The analytical data indicate that the ground water in the water table and potentiometric zones contains organic compounds in the northern and central portions of the site. In addition, the inorganic analytical data indicates saltwater intrusion from the Raritan River. Based on its high salinity alone, the ground water in the unconsolidated deposits at the Nuodex site is not of potable quality.

- o The highest concentrations of total volatile organics (>1,000 ppm) are found at wells 30S, 30D, 31S, B7S, B7D, 27D, B6S, B6D, 32D, 33S, 21P, 17A, B4 and B8D. The major organic components in both zones include toluene, xylene, benzene, chlorotoluene, chlorobenzene, benzaldehyde, chloroform, phthalate esters and benzyl alcohol.
- o The distribution of organic components in ground water indicates three areas exceeding ECRA action levels: (1) the northeastern corner of the site downgradient of Hatco Chemical, (2) the northwestern side of the site adjacent to Sherwin Williams and former on-site production areas, and (3) the central portion of the site downgradient of former production areas and the two sludge lagoons.
- O An off-site source to the north of the Nuodex site (Hatco Chemical) appears to be contributing some of the benzene, toluene, and chlorotoluene observed in the northeastern corner of the site, as indicated by the data from wells B25S and D, 27D and 28D. Some of the toluene and chlorotoluene, however, may originate from an on-site source(s) since concentrations tend to increase downgradient of the northern property line. Landfill

L1 is indicated as a potential source of the toluene, chlorotoluene, and benzaldehyde contamination detected in wells 27D and B4, but confirmation of the contents of this disposal area and additional upgradient analytical data is needed.

- o Volatile organic and acid extractable organic components were detected in both the water table and potentiometric zones on the northwestern side of the site. Concentrations of toluene, chlorotoluene, benzene, chlorobenzene, chloroform, carbon tetrachloride and phenol esters in excess of ECRA action levels were detected in wells B7S and D, 30S and D, B8S and D and 17A and B (where analyzed). Although elevated levels of some of these materials were found in the soils in this area, the Sherwin Williams facility to the west may be contributing some of these materials since compounds never used by Nuodex are detected in the ground water. Seasonal fluctuations of ground water flow direction may result in transporting off-site components, but additional water quality and water elevation data are needed for confirmation of seasonal trends.
- o Levels of organic compounds exceeding ECRA action limits is detected in the central section of the site downgradient of the central production areas and sludge lagoons. Chlorotoluene was detected in the water table zone above ECRA action levels in well B6S and benzene, toluene, chlorobenzene, chlorotoluene, xylene and ethylbenzene was detected above ECRA action levels in the potentiometric zones as indicated by wells B6D, 21D, 22A,

and 32D. The organic compounds detected in the ground water in this area appear to be concentrated in the potentiometric zone. Analytical data obtained from the second round of well sampling will be useful in determining probable source areas.

- o Low levels of organic compounds were detected in the ground water at wells 31S, 33S and B5S located in the "sludge disposal area". The concentrations of toluene, chlorotoluene and ethylbenzene observed in this area may be related to sludge disposal activities or horizontal migration in the shallow water table zone.
- o Comparison of the analytical data from wells 25S and D (PVC construction) and wells 25AS and 25AD (stainless steel construction) indicates that well construction materials did not appear to have an influence on the results of ground water analysis. Specifically, no significant differences were observed between the clusters in values of metals and other inorganics, phthalates or the indicator parameters. The differences in values of some organic compounds between clusters 25 and 25A are most likely attributable to sampling and/or analytical influences rather than well construction materials.
- o Based on a review of organic compound distribution, horizontal migration of these materials appears to be localized to the three areas of concern discussed earlier. Generally, horizontal

migration of compounds is more prevalent in the deeper potentiometric zone than in the water table, as illustrated by the more
widespread presence in the deeper ground water regime. This
trend may be reflective of the long site history, the time
dependent downward vertical migration of organics, and
horizontal movement of these materials in the deeper ground
water regime.

3.0 RESULTS OF INVESTIGATION

3.1 HYDROGEOLOGY

Previous site investigation identified two ground water flow systems in the upper 40 feet of the geologic section at the Nuodex Inc. site, a water table zone and a potentiometric (artesian) zone separated by a clay/peat layer of varying thickness. Monitoring well drilling activities initiated as part of this ECRA study confirm that water table conditions exist in the upper five to ten feet of fill, clay and organic sand and silt (see Figures 2 and 3) which varies in thickness and composition across the site. A potentiometric zone is separated from the water table zone by a clay layer in the northern and southern sections of the site and a peat layer in the central section of the site. Both the clay and peat layers vary in thickness from one to ten feet and appear to grade into a highly organic sand/silt layer on the western side of the site (see Figure 3).

An estimated 40 to 75 feet of overburden is found at the site location, underlain by the Raritan Fire Clay which is an estimated 20 to 30 feet thick. The Brunswick Formation is encountered beneath the Raritan Fire Clay at a depth of between 75 and 100 feet. The Brunswick consists of interbedded layers of red shale and sandstone with a well developed system of fractures and joints.

In accordance with NJDEP requests, water level measurements were obtained from all accessible on-site monitoring wells on three separate dates (see Table 3). The ground water contour maps provided in Figures 4 through 9 indicate lines of water level elevation. The maps were prepared from water level measurements of wells screened in the water table (shallow) and potentiometric (deep) zones. Based on determination of lines of equal water level elevation. The contour maps indicate that the direction of shallow ground water flow is to the south in the northern portion of the site, shifting to a southeasterly flow in the southern portion of the site. Ground water flow in the deeper flow regime is predominantly to the south. Local variation in the direction of flow in the water table zone is attributable to topographical influences, the location of surface waters, and the proximity to the Raritan River.

Water level elevation data from monitoring wells on the Sherwin Williams site to the west contributed to the definition of the characteristics of ground water flow across the northwestern property line. As Figures 4 through 9 indicate, flow remains consistently to the south in the potentiometric zone beneath the Nuodex site whereas ground water flow in the same zone on the Sherwin Williams site shifted to a southeasterly direction towards the southern portion of the Nuodex Inc. site (see Figure 9).

Evaluation of the hydraulic gradient between wells screened in the water table and those screened in the potentiometric zone indicates a vertical component of ground water flow across the clay/peat layer (see Table 3). Comparison of water level elevations in the northern portion of the site (well clusters B2S and D, 25S and D and 28S and D) indicate a slight upward head gradient across the clay/peat layer. South of well cluster 27S and D, and over the remainder of the site, a downward head gradient is observed indicating downward leakage of ground water across the clay/peat layer. The significance of the vertical flow component relative to the horizontal (or lateral) flow of ground water is expected to be minimal due to the low permeability of the clay/peat layer as compared to the sand and silt above and below it although determination of actual permeability or hydraulic conductivity values are needed for confirmation.

3.2 SOIL ANALYTICAL RESULTS

Analytical results of the laboratory testing of soil samples collected at the Nuodex Fords facility are provided in Attachment C, including the results of field and travel blanks. A summary of the soil analytical results is provided in Tables 4 through 19. The tables summarize the data indicating what was detected in each area of environmental concern described in the Sampling and Analysis Plan. Quality Assurance and Quality Control documentation for the soil analysis is provided in Attachment E.

The data are discussed relative to ECRA action levels for soil quality. Figures 10 and 11 summarize the analytical findings.

3.2.1 Area A - Background

Two samples were collected from the northwest corner of the property to determine the levels of materials present as background in the soil. This area was selected in view of its distance from the production areas. Both samples were analyzed for priority pollutants, total phosphate, and ph.

Sample A2 exhibited levels below or near ECRA action levels for all parameters.

Sample Al exceeded the ECRA action levels for several materials. Copper, lead, zinc and cadmium were observed at concentrations of 920 ppm, 500 ppm, 2,130 ppm, and 11 ppm, respectively. Arochlor 1242 was found at 2.1 ppm and Arochlor 1254 at 4.0 ppm, yielding a PCB total of 6.1 ppm. In addition, pesticides 4,4-DDD and 4,4-DDT were detected at 0.80 ppm and 0.67 ppm respectively.

3.2.2 Area B - West Lake, East Lake, and Hartmann's Pond

Due to the potential for materials to collect in the ponds from incidental subsurface migration or spillage, two sediment samples

were collected from each pond for analysis. All six samples were Ekman dredge sediment grabs analyzed for priority pollutants, total phosphates, and pH.

Samples B1 and B2 represent the west and east sides of West Lake respectively. Since these are lake sediment samples, ECRA action levels do not apply. Concentrations of 190 ppm and 130 ppm for arsenic, 6,000 ppm and 1,300 ppm for copper, 3,900 ppm and 1,300 ppm for lead, and 1,900 ppm and 2,700 ppm for zinc were exhibited by samples B1 and B2, respectively.

The library search indicated 1,1-oxybisbenzene (210 ppm) as the only base neutral extractable organic detected in sample B1. Sample B2 contained base neutrals totaling 55 ppm attributable to methylpropene isomers and bis(2-ethylhexyl)phthalate.

Volatile organics totaled 33.9 ppm and 162 ppm for B1 and B2, respectively. Methylethyl ketone and chlorotoluene isomers were observed in both samples.

With regard to Hartmann's Pond arsenic, chromium, copper, lead, nickel, and zinc were detected in concentrations ranging from 75 ppm of arsenic in sample B5 to 2,000 ppm of lead in sample B6.

Hydroxybenzaldehyde, detected in sample B5 at 46 ppm, was the only base neutral extractable compound detected in the Hartmann's Pond samples.

The volatile organic total of 356 ppm for sample B5 and 5,020 ppm for B6 includes benzoic acid, benzaldehyde, benzyl alcohol, and toluene in both samples. The low average pH of 4.43 indicates that the pond is slightly acidic.

Sediments from East Lake contained lead, and zinc in samples B3 and B4, and arsenic in sample B3. Concentrations of these compounds are within the limits of 100 ppm and 220 ppm. The remaining inorganics are present at low levels.

Volatile organic totals of 11.54 ppm and 2.84 ppm were detected in samples B3 and B4, respectively. Phthalate present in both samples yielded a total base neutral concentration of 354 ppm in sample B3 and 11 ppm in sample B4.

3.2.3 Area D - Non-Production Area

Samples were collected in Area D in order to determine whether surface or subsurface migration of materials has occurred.

Samples D1 and D2 were analyzed for pH, base neutral, and volatile organics. The only evidence of detected materials appeared in

_18 L

sample D2 which contained 13 ppm of bis(2-ethylhexyl)phthalate. A lower consentration of 0.44 ppm of bis(2-ethylhexyl)phthalate was observed in sample D1.

An additional soil sample designated MW-28D was obtained at a depth of 8-10 feet during the installation of monitoring well 28D. This sample was collected in lieu of hand auger sample D3 from the Sampling and Analysis Plan. Sample D3 was analyzed for priority pollutants and indicated insignificant levels of both organics and inorganics. Only ercury at 18 ppm appeared in concentrations above the suggested ECRA level. The pH was measured at the relatively acidic level of 3.5.

3.2.4 Area E - Parking Lot and General Office Area

This is a general non-production area, although there is record of five spills in the area.

Transformers are located next to the railroad tracks and adjacent to building 58. Seven soil samples were collected next to the transformer pads and composited into three samples. PCB content of samples E1-3, E4-6, and E7 was non-detectable by laboratory analysis.

Samples E9, E10, and E11 were analyzed for volatile organics. A total concentration of less than 1 ppm was detected in all three samples.



10011 (qu)

Soil samples at the time of tank removal indicate petroleum hydrocarbon concentrations exceeding the ECRA action level down to ground water next to the guardhouse.

3.2.5 Area F - General Plant Area

This area covers the central and western production area including Buildings 22, 25, 35, 36, 37 and 47. Soil samples were collected in high traffic volume areas, storage areas, transformer locations, and spill locations.

Samples F1, F2, F3, and F4, obtained from the western production area around Buildings 36 and 37 were analyzed for pH, total phosphate, phenols, and base neutral compounds from 0-6 inch borings. Samples from the 18-24 inch boring were analyzed for USEPA Priority Pollutant Volatile Organics and library searches. In addition, samples F3 and F4 were analyzed for PCB content.

The pH of the soil was slightly alkaline and ranged from 8.4 to 9.2. Total phosphate concentrations had a greater range, ranging from 175 ppm to 760 ppm. Phenols were detected in F2, F3, and F4 in low concentrations ranging from 0.2 ppm to 0.5 ppm.

Samples F1, F2, F3, and F4 all contain some levels of base neutral compounds ranging from 3.65 to 750 ppm. Volatile organics were not detected in any sample except F2, where 0.14 ppm of acetone was detected. In addition, no detectable levels of PCBs were

found in samples F3 and F4. See Table 8 for summary of results or specific analysis sheets for more specific information (Attachment C).

Samples F5, F6, F7 were wipe samples that were collected in areas proximate to transformer locations and were analyzed for PCB content. No detectable levels of PCBs were found in any of the samples.

Sample F8 was collected in a spill area and analyzed for volatile organic compounds. No detectable levels of volatile organic compounds were found in the sample.

Samples F9-11 and F17-19 were 0-6 inch composites that were collected around transformer locations and analyzed for PCB content. No detectable levels of PCBs were found in F9-11 or F17-19.

Samples F12, F13, F14 were collected from around Building 25 and composited into one sample. Along with sample F16, the 0-6 inch borings were analyzed for pH, total phosphate, phenols, and base neutral compounds. USEPA Priority Pollutant Volatile Organic analysis was performed on the 18-24 inch boring from each sample.

Samples F12, F13, and F14 have a slightly acidic pH of 5.8, total phosphate concentration of 345 ppm and 11.0 ppm of phenols. The

Samples G3, G4, G5, and G6, obtained from the northern side of building 30, were analyzed for base neutrals, metals, and petroleum hydrocarbons. Sample G3 contained 13.42 ppm of base neutral organics consisting mainly of polynuclear aromatics. Only benzo(b,k)fluoranthene exceeded 1 ppm, exhibiting a level of 1.6 ppm. This compound was also present in composite G5, G6 at 1.24 ppm.

Samples G4 and G5-6 exceeded suggested ECRA action levels for chromium, copper, lead, and zinc. Concentrations in both samples range from 115 ppm of lead to 1.440 ppm of chromium in G4.

Only library search base netural compounds were identified in sample G7-8. The concentration sum of 36.6 ppm includes the presence of dichlorotoluene isomers. lopom.

Sample G5-6 indicated a petroleum hydrocarbon content above the ECRA action level. Concentrations of petroleum hydrocarbons were detected at 10 ppm in G4 and 112 ppm in G5-6.

For the soil located near Building 40, the NJDEP requested petroleum hydrocarbon analysis. Sample G9, collected from the south side of this building, contained (635 ppm of petroleum hydrocarbons.

Volatile organics were present at concentration totals of less than 1-ppm for all the above-mentioned samples except I7. Sample I7 exhibited a volatiles sum of 20.27 ppm which consisted mainly of a monochlorotoluene isomer (11.0 ppm).

Library search base neutrals indicated total concentrations of 1.52 ppm in I1-2, 415 ppm in I3-4, 4.73 in I6, and 21.93 in I7. No compounds were detected in sample I5. The base neutral sum of sample I3-4 is due mainly to the presence of 369 ppm of unknown hydrocarbons. Xylene isomers and 5, 5-dimethyl-2(5h)-furanone were also detected, each at 23 ppm. The total for I7 reflects several compounds such as chlorinated benzenes, PCB isomers, and 4,4-DDE at low concentrations.

Samples I8-9 and I10-11, which were analyzed for PCBs contained non-detectable concentrations of these compounds.

3.2.9 Area_J - Discontinued Production Area S-2

The production buildings in this area were demolished in 1980. Due to potential for soil contamination from material handling, this area has been designated for soil sampling and analysis. Six soils were collected, composited into three samples, and analyzed for pH and priority pollutants.

This area displayed the following inorganic compounds in excess of the ECRA action levels: sample J1-2 contained (1,900 ppm) of

copper and 230 ppm of lead; J3-4 and J5-6 exibited mercury concentrations of 1.5 ppm and 1.7 ppm, respectively; In addition, the level of lead was determined to be 160 ppm in sample J5-6.

Volatile organic totals were found to be 40.3 ppm in J1-2, 1.2 ppm in J3-4 and 110 ppm in J5-6. Other values detected were benzaldehyde (40 ppm) in J1-2 and monochlorotoluene isomers (100 ppm) in addition to 1,2-dimethyl-3-methylenebicyclo[2.2.1] heptane in J5-6.

Base neutral compounds totaled 1,900 ppm in samples J1-2 and J3-4. Sample J1-2 contained an estimated 1,900 ppm of unknown hydrocarbons while sample J3-4 contained 200 ppm of dichlorotoluene isomers and 1,700 ppm of unknowns. Dichlorotoluene isomers (5,200 ppm) were detected in the base neutral scan of sample J5-6.

3.2.10 Area K - Drum Storage Area

This area is the site of past drumming operations and is presently used for storage of hazardous and non-hazardous wastes. A closure plan for this building has been submitted to Mr. Frank Coolick of the Bureau of Hazardous Waste Engineering of the NJDEP. A copy of this closure plan was also submitted to the BISE office for review.

The closure plan details sampling and analysis around Building 60. Eight samples were collected along the southern and eastern sides

of Building 60 and composited to four samples for priority pollutants analysis plus library searches.

Samples K1-2, K3-4, K5-6, and K7-8 exhibited concentrations well below the ECRA action levels used by BISE for all inorganic compounds, except for mercury in K7-8. In this sample, mercury was detected in the two composites obtained from the eastern side of Building 60. Totals were 1,547 ppm for K1-2 and 849 ppm for K3-4. Dichlorotoluene isomers were found in both samples at levels exceeding 100 ppm. Sample K3-4 also contained dimethyl naphthalene isomers (130 ppm), methyl phenanthrene isomers (120 ppm), trimethyl naphthalene isomers (80 ppm), dibenzo thiophene (23 ppm), and dimethyl phenanthrene isomers (23 ppm).

Base neutrals were observed in samples K5-6 and K7-8 at levels totaling 224 ppm and 8 ppm, respectively. These samples represent soils from the southern side of Building 60.

The highest level of volatile organics appeared in sample K3-4 (672 ppm). This total mainly reflected the presence of hexane at (500 ppm).

Samples K3-4, K5-6, and K7-8 also contained toxaphene at concentrations of 340 ppm, 1,120 ppm, and 27 ppm respectively.

Sample K9, obtained at a spill location next to a railroad siding, was also analyzed for priority pollutants plus library searches.

Analytical results indicated levels below ECRA action levels for all priority pollutant organics and inorganics. Library searches of volatiles, however, identified chlorotoluene isomers at 400 ppm and methylethyl ketone at 17 ppm. Dichlorotolune isomers (468 ppm) and unknowns (280 ppm) were detected through the base neutral library search.

Two background samples, K10 and K11, were collected west of Building 60. These samples contained concentrations below ECRA action values for all organic and inorganic priority pollutants with the exception of mercury. Analytical results of 1.7 ppm of mercury for K10 and 1.5 ppm of mercury for K11 slightly exceeded the suggested level of 1 ppm.

A base neutral library search of K10 and K11 identified total concentrations of 199 ppm and 200 ppm respectively. These consist mainly of chlorotoluene, dichlorotoluene isomers, and unknowns.

The library search of volatile organics in K10 detected a total concentration of 470 ppm, wholly attributable to an unknown compound. Volatiles in K11 were observed at a level of only 1.29 ppm. Toxaphene, which also appeared in samples K3-4, K5-6 and K7-8, was found at 905 ppm an K10.

3.2.11 Area L - Discontinued Production Area S-1

Soil samples were collected in this area to determine the potential presence of compounds introduced into the area through incidental chemical spills. Samples were also taken to assess the possible presence of compounds at points of entry and exit from five above ground tanks and possible presence of PCBs from transformers in this area.

Samples L1-2, L3-4, L5-6, obtained from the southern side of Buildings 25 and 22, were analyzed for USEPA priority pollutants and pH. Sample L1-2 exceeded ECRA action levels for six metals, arsenic, copper, lead, mercury, silver, and zinc, and for total base neutral compounds. There were no detectable volatile organics, herbicides, or PCBs.

Sample L3-4, exceeded the ECRA action levels for four metals, arsenic, cadmium, mercury, and lead, and for total base neutral compounds. Toluene (0.08 ppm) was the only volatile organic compound detected in the sample. Sample L5-6 exceeded the suggested ECRA action levels for three metals, lead, mercury, and silver, and total base neutral compounds. Toluene (1,300 ppm) was the only volatile organic compound detected.

Samples L7-8 and L9-10 were composites taken to determine the presence of PCBs from transformer leakage. Sample L7-8 contained 16,000 ppm of Arochlor 1248, and L9-10 contained 17,000 ppm of

Arochlor 1248 indicating the presence of PCBs in the soils adjacent to the transformers.

Samples L11-12 through L19-20 were analyzed for individual compounds based upon the past storage history of the area. Sample L11-12 was analyzed for toluene, which was not detected. Sample L13-14 was analyzed for strobane and was found to contain 4,700 ppm. Samples L15-16 and L17-18 were analyzed for total chlorotoluene. Sample L15-16 contained 230 ppm while L17-18 exhibited 43 ppm of total chlorotoluene. Sample L19-20 was analyzed for camphene which was found non-detectable.

3.2.12 Area M - Production and Wastewater Treatment Facility

This area includes Building 12, the wastewater treatment facility, and the sludge lagoons.

Due to the possibility of the presence from incidental chemical spills, soil composite M1-2 was collected adjacent to Building 12. Analysis of the sample indicated a total volatile organic value of less than 1.0 ppm and a pH of 5.6. Sample M6, obtained in a nearby area also suspected of material spills, exhibited a pH of 5.0 and a total volatile organic value of less than 1.0 ppm.

Soil composite M3-5 and surface wipe M5 were analyzed for PCBs because of the location of a transformer on top of Building 12.

The soil, collected at the point of runoff from the roof, as well as the surface wipe, indicated a non-detectable PCB concentration.

3.2.13 Area O - Landfill L3

Samples were collected at 20 points within landfill L3 and at 2 points along the berm in order to characterize this area. Nine composites were subsequently made and analyzed for priority pollutants plus library searches, pH, and total phosphate.

Inorganic compounds consistently occurring in levels exceeding ECRA action levels were arsenic, chromium, and copper. Arsenic concentrations ranged from 36 ppm in samples 019-21 to 170 ppm in 025-26. Chromium levels ranged from 16 ppm in sample 016-28 to 260 ppm in 025-26. Seven of the nine samples exceeded ECRA action levels for chromium. Eight samples were above ECRA action levels for copper. Concentrations ranged from 36 ppm in 016-18 to 470 ppm in 025-26. Lead results ranged from 29 ppm in 013-15 to 340 ppm in 025-26 with four of the nine samples exceeding the suggested ECRA action level. Selenium and cadmium also exceeded suggested ECRA action levels in sample 025-26 exhibiting a concentration of 4.2 ppm for each. It can be observed that the highest concentration of almost every metal appears in composite 025-26 representing the landfill berm.

Total phosphates were higher in samples collected from the western half of the landfill than on the eastern half. Samples O3 through

013-15 average 2,500 ppm while samples 016-18 through 025-26 average 378 ppm in total phosphate concentration.

Pesticides were also detected in samples from the western portion of L3. Sample O3 contained low levels of alpha BHC, beta BHC and endosulfam I totaling 0.64 ppm. A pesticide total of 3.7 ppm was found in sample O5-6 consisting of 4,4-DDD, 4,4-DDT, and endosulfam I. These same compounds total 1.25 ppm in sample O8-9. Sample O10-12 contained only beta BHC at 0.12 ppm.

The majority of base neutral organics were found in sample 016-18. It contained 10 priority pollutant compounds totaling 48.2 ppm. Levels ranged from phenanthrene at 1.3 ppm to fluoranthene at 10 ppm. Sample 019-21 exhibited 1.2 ppm of fluoranthene. The remaining samples showed either non-detectable concentrations of any base neutrals or under 2 ppm of bis(2-ethyl-hexyl)phthalate.

Very low levels of benzene and toluene were the only volatile organics detected. Toluene was found in sample O5-6 at 0.12 ppm.

Benzene and toluene were indicated at concentrations of 0.05 ppm and 0.04 ppm respectively for sample O22-24.

3.2.14 Area P - Non-Production Area

Eight samples were collected in the marshland near the western perimeter of Nuodex's property boundary. The samples were taken along the transects of surface water flow in an attempt to define the extent to which materials transported onto Nuodex Inc. land from a landfill located on the Ashland Chemical site. Four composites were analyzed for priority pollutants plus library searches.

All four composites were found to be in excess of suggested ECRA action values for arsenic, chromium, copper, lead, and mercury. Arsenic levels ranged from 76 ppm in sample P3-4 to 240 ppm in P1-2. Concentrations of chromium ranged from 210 ppm in P5-6 to 360 ppm in P3-4. Copper results ranged from 247 ppm in sample P5-6 to 474 ppm in P3-4 and mercury varied between 5.7 ppm in sample P3-4 and 7.6 ppm in P7-8.

Samples P1-2 and P3-4, exceeded suggested ECRA action levels for silver, cortaining 23 ppm and 38 ppm, respectively. Also, cadmium was detected in two of the samples at levels slightly above ECRA action levels. Concentrations of 18 ppm and 16 ppm were detected in samples P1-2 and P5-6, respectively.

Varying amounts of organic compounds were detected in all four samples. The following volatile organics were detected in small quantities: methylene chloride, acetone, and hexane. Also, 0.01 ppm of 1,4-dioxane was indicated in sample P5-6. Volatile organics totaled 2.31 ppm, 0.52 ppm, 0.98 ppm, and 0.55 ppm in samples P1-2, P3-4, P5-6, and P7-8, respectively.

The base neutral/acid extractable totals consist mainly of unknown hydrocarbon matrices. Benzo(a)-pyrene, benzo(b+k)fluoran-

thene, and 5,5-dimethyl-2(5h) furanone were also found in sample P3-4 at—less than 2 ppm each. Sulfur was detected in sample P7-8 at 8.1 ppm, and bis(2-ethylhexyl)-phthalate was contained in P3-4 and P5-6 at 2.7 ppm and 4.6 ppm, respectively. Base neutral/acid extractable concentrations totaled 152 ppm, 209 ppm, 229 ppm, and 115 ppm for samples P1-2, P3-4, P5-6, and P7-8, respectively.

Pesticides were detected at very low levels in all four samples. Concentration totals of 0.33 ppm, 0.73 ppm, 0.28 ppm, and 0.32 ppm were found in samples P1-2, P3-4, P5-6, and P7-8, respectively. These totals reflect the compounds 4,4-DDD, 4,4-DDE, and 4,4-DDT.

3.2.15 Area Q - Areas of No Vegetative Growth

Four areas were identified that have little or no vegetative growth. Samples were collected from each area and analyzed for priority pollutant metals in an effort to explain the limited growth of natural ground cover.

Samples Q1-2 and Q3-4 represent the barren stretch immediately south of Area L. Both samples exceeded the ECRA action level for arsenic and lead. Levels of 40 ppm and 220 ppm were exhibited respectively, for Q1-2, while concentrations of 48 ppm and 170 ppm, respectively, were detected in Q3-4.

Another tract exhibiting a lack of vegetation exists east of Area L. Sample Q5-6, which was obtained from this tract, is in

excess of ECRA action level for arsenic, chromium, copper, and lead. Analyses indicated respective concentrations of 150 ppm, 120 ppm, 370 ppm, and 440 ppm in this sample.

Sample Q7-8 was collected from an unvegetated area immediately south of landfill L2. Chromium, copper, lead, and zinc were all detected in concentrations above the ECRA action level. They existed at levels of 710 ppm, 500 ppm, 450 ppm and 860 ppm, respectively.

Southeast of this area, a composite was obtained from another portion of land lacking vegetation. This sample, designated Q9-10, contained copper at 520 ppm, lead at 340 ppm, and zinc at 560 ppm. These values exceed established ECRA action levels.

Table 19 compares the heavy metal analytical results of Area Q samples with suggested plant tolerance levels. All five samples exceed the ECRA action levels indicated for arsenic, copper, lead, and nickel. The concentration of these heavy metals offers an explanation of the absence of plant life in these tracts.

3.3 GROUND WATER ANALYTICAL RESULTS

The analytical results of laboratory testing of ground water samples collected from the 27 monitoring wells included in the ECRA study are provided in Attachment D. Also included are

the results for field and travel blanks. A summary of the ground water analytical results is provided in Tables 20 and 21. These tables list only those parameters which were found above the detection limit in any sample.

All ground water samples were analyzed for the parameters included in Groups II and III, as outlined in the Sampling and Analysis Plan for the Nuodex Fords site (see Attachment A). All ground water sample analyses were performed by the PAS certified analytical laboratory. All Quality Assurance and Quality Control documentation for the ground water analytical data is provided in Attachment E.

The analytical results indicate that the ground water in both the water table and potentiometric zones exceeds the ECRA action level for organic compounds in the northern and central portions of the site. The highest concentrations of total volatile organics, including library search compounds (>1,000 ppb) are found at wells 30S, 30D, 31S, B7S, B7D, 27D, B6S, B6D, 32D, 33S, 21A, 17A, B4, and B8D. In general, both the water table and potentiometric zones contain varying levels of various organic compounds, but their distribution appears to be more widespread in the potentiometric zone. The major components in both zones include toluene, xylene, benzene, chlorotoluene, chlorobenzene, benzaldehyde/benzoic acid, chloroform and formaldehyde. Figures 12 through 25 show the distribution of the major organic compounds in the water table (shallow) and potentiometric (deep) zones.

Comparison of the diagrams identifies three areas of ground water where ECRA action levels were exceeded; (1) the northeastern corner of the site adjacent to Hatco Chemical Co., (2) the northwestern side of the site adjacent to Sherwin Williams and former on-site production areas, and (3) the central portion of the site downgradient of former on-site production areas and the two sludge lagoons. The diagrams also illustrate that benzene, toluene, chlorobenzene, chlorotoluene and, to a lesser extent, chloroform are widely distributed, whereas xylene and benzaldehyde appear to be concentrated in the central portion of the site.

In reviewing the analytical data, it became apparent that formaldehyde and propanoic acid were detected in the majority of samples analyzed, including those from the up-gradient wells 25S and D, 25AS and AD. Because only one round of sample analysis has been performed these analytical values are considered anomalous at this stage of the project. The presence of propanoic acid is attributable to laboratory or sampling equipment contamination and the formaldehyde analytical methodology has been shown to be inappropriate (see Section 2.5). The summary tables include values of propanoic acid and formaldehyde detected in the ground water and, upon confirmation with the second round of analysis, formaldehyde and propanoic acid contamination will be discussed.

Organic compounds detected in the ground water in the northeastern corner of the site are represented by the analytical data from

monitoring Well clusters B2S and D, 25S and D, 25AS and AD, 27S and D, B4 and 28S and D (see Tables 20 and 21 and Attachment D). The results indicate concentrations of benzene in wells B2S (210 ppb), B2D (190 ppb), 25AD (140 ppb), 27D (33 ppb) and 28S (27 ppb) and concentrations of toluene in wells 27D (370 ppb) and 28S (200 ppb). Chlorotoluene was also detected in wells 25S (57 ppb), 25AB (310 ppb), 27D (6,400 ppb), 28S (440 ppb), and 28D (9 ppb). In addition, chlorobenzene and chloroform in levels slightly above ECRA action levels are detected in well 28S. Since wells B2S and D, 25S and D, and 25AS and AD are hydraulically upgradient of any possible Nuodex source, and benzene concentrations in the potentiometric zone decrease in a downgradient direction from the northern border, contamination of these wells suggests an off-site source of benzene to the north. Additionally, the data indicates that some toluene and chlorotoluene are contributed from an offsite source to the north, however concentrations tend sporadically increase in a downgradient direction from the northern property boundary indicating a potential on-site source in the vicinity of well cluster 27. The on-site source is possibly related to Landfill Ll since elevated levels of toluene and chlorotoluene were found in the lake sediments of Hartmann's Pond immediately adjacent to the landfill (see Figure 1 and Table 5). Confirmation with the second round of sampling is necessary price to determination of source area contributions.

Wells 27D and B4, both downgradient of landfill L1, were found to contain 9,880 ppb and 120 ppb, respectively, of benzaldehyde which

was also found in high levels in the Hartmann's Pond sediments (see Tables 5, 20 and 21). Elevated levels of benzyl alcohol (20,100 ppb in well 27D and 50 ppb in well B4) may also be related to landfill L1 since similar compounds were detected in the adjacent lake sediments. There is no indication, however, of a possible source for the phenol esters (3,300 ppb) detected in well 27D other than industrial activity in this area.

The presence of organic compounds in the deeper wells downgradient of Hartmann's Pond rather than the shallow wells may be due to a combination of a downward vertical flow component in this area and the chemical nature of those components.

Ground water quality in the northwestern section of the site is represented by the data collected from wells B7S and D, 17A and B, 30S and D and B8S and D (see Tables 20 and 21 Figures 12 through 26). As the analytical data indicate, levels of volatile and acid extractable organics are detected in both the water table potentiometric zones in this old production area. and Specifically, concentrations of toluene, chlorotoluene, benzene, chlorobenzene chloroform, carbon tetrachloride and certain phenol esters were detected in wells B7S and D, 30S and D, B8S and D and 17A and B (where included in analysis). As Figures 14 through 21 illustrate, wells B7S and D have the highest concentrations of toluene (19,000 and 15,000 ppb, respectively), chlorotoluene (14,470 and 7,200 ppb, respectively), chloroform (4,000 and 1,000 ppb, respectively) and chlorobenzene (630 and 610 ppb,

respectively). Generally, the highest concentrations are found in the shallow water table zone and, based on the available data, tend to decrease downgradient from cluster B7S and D to clusters 17A and B and B8S and D (see Tables 20 and 21). Elevated levels of chlorotoluene, toluene, and chlorobenzene were detected in the soils of the old on-site production area; therefore, an on-site source may be contributing these materials to the ground water contamination.

Shallow ground water flow patterns indicate that wells B7S and D, 17A and B and B8S and D are not always downgradient of Nuodex's western neighbor, Sherwin Williams. Seasonal fluctuations in ground water flow direction however, may result in migration onto the Nuodex facility from off-site sources west of the site. Ground water flow around the Ashland landfill may also influence material transport towards the Nuodex site. The high concentrations detected in cluster B7S and D suggests the impact of an off-site source to the west and is supported by the 240 ppb of methylethyl ketone (MEK) detected in well 17A. (MEK has been identified as a Sherwin Williams target compound). The degree of off-site and on-site influences on ground water quality in this section of the site, however, cannot be fully evaluated without water quality data from the Sherwin Williams site.

The analytical data from well 30S, also located in the northwestern section of the site, indicates a reduction in concentration of most compounds relative to well clusters B7 and 17 (see

Tables 20 and 21), but a significant increase in toluene concentration relative to wells 17A and B is observed. In addition, elevated levels of xylene and phenol esters were detected in wells 30S (340,000 ppb and 2,500 ppb, respectively), and 30D (390 ppb and 224 ppb, respectively), whereas these compounds were not found in the wells on the site's western border (see Figures 20 and 21). Elevated levels of toluene and xylene were detected in the soils in this former production area (see Tables 13 and 14), therefore, an on-site source in Areas K and L appears to be contributing some of the concentrations observed in the ground water. Analytical data obtained from upgradient wells 29S and D in the second round of sampling will be useful in confirming potential source areas. As Figures 12 through 23 illustrate, well cluster B8 was found to contain the lowest concentrations of organic compounds in the northwestern section of the site. The residual vertical and horizontal levels observed in this well cluster reflects limited vertical and horizontal migration of organic compounds in this section of the site.

Ground water quality in the central portion of the Nuodex site is represented by data collected from wells 26, B6S and D, 21A and B, 22A and B and 32D. Review of the analytical data from these monitoring wells indicates concentrations of organic compounds consisting primarily of benzene, toluene, chlorotoluene, chlorobenzene ethylbenzene, xylene, 1,3-dichloropropylene, and phthalate esters (see Tables 20 and 21). As Figures 12 through 23 indicate, the potential source for the ground water quality in

this area may be associated with the former upgradient plant areas—and sludge lagoons. Chlorotoluene and xylene were found in wells 6D (820 and 470 ppb, respectively), 22A (950 and 5,600 ppb, respectively), and 32D (1,600 and 630 ppb, respectively). Additionally, benzene, chlorobenzene, and toluene were detected in wells 21D, 22A and 32D. Ethylbenzene was found in well 22A (59 ppb) and phthalate esters were detected in well 6S only (730 ppb). Since the organic compounds tend to be concentrated in the potentiometric zone rather than the water table in this area, analytical data from deep wells upgradient of well clusters B6, 21, and 22 are necessary prior to determination of source areas.

Although concentrations of benzene, ethylbenzene, and toluene in the potentiometric zone in the central portion of the site decrease downgradient towards well 32D, the concentrations of xylene, chlorotoluene, and chlorobenzene are found to increase. Since it is unlikely that an additional source exists between the lagoons and well 32D, this trend may be reflective of the, progressive horizontal migration of these compounds in the potentiometric zone.

Wells 31S and 33S were also included in the ECRA Sampling and Analysis Plan and wells B5S and D were sampled in accordance with the site NJPDES permit. Each of these wells is located in the "sludge disposal area" in the southwestern section of the site. Only a minor impact on the ground water quality is observed in this area. Chlorobenzene was detected in wells 31S (29 ppb)

and B5S (25 ppb) with residual toluene (23 ppb) and ethylbenzene (16 ppb) found in well B5S only. The residual levels observed in this area may be related to sludge disposal activity or horizontal migration from the central portion of the site. Extent of residual compounds in this area seems to be restricted to the shallow water table zone.

Review of chloride concentrations in the water table and potentiometric zones indicate a consistent landward decrease in both zones with sporadic inland increases observed in the potentiometric zone (see Table 20). The landward decrease in chloride concentration is indicative of the influence of the salinity of the adjacent Raritan River. The slight inland increases in chloride concentration observed in the potentiometric zone coincide with areas where the highest levels of compounds were detected in the ground water. Specifically, wells B7D and 27D show slight elevations in chloride concentration.

The pH of the ground water at most well locations was near neutral (between 5.5 and 6.7) with the exception of wells B3 (pH = 3.4), 27D (pH = 3.5), 30S (pH = 3.7), and 33S (pH = 8.5). Based on the available data, the cause of the pH conditions observed in these wells is uncertain and may only reflect inaccurate measurements.

Review of the remaining inorganic analytical data collected as part of this ECRA study indicates residual arsenic in wells B6S (0.2 ppm) and 33S (0.09 ppm), slightly above the NJDEP criteria of

0.05 ppm for ground water quality. The only other inorganic of concern detected above NJDEP criteria is lead which was detected in well 25s at 0.73 ppm, above the NJDEP criteria of 0.05 ppm. As illustrated in Figure 10 arsenic and lead are present in the central portion of the Nuodex site and are the possible source of this residual contamination.

Table 1

Nuodex Inc. Fords, New Jersey

CHRONOLOGY OF EVENTS; SOIL SAMPLE COLLECTIONS

Samples	Date Collected
J1, J2, J3, J4, J5, J6, Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10	10/17/85
Al, A2, E7, E10, L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 L11, L12, L15, L16, L17, L18	10/17/85
B1, B2, B3, B4, B5, B6, G4, G5, G6, G9	11/01/85
MW28D - 8'-10' soil sample	11/04/85
Al (resample), A2 (resample), G1, G2, G3, G7, G8	11/15/85
03, 05, 06, 08, 09, 010, 011, 012	11/20/85
E1, E2, E3, E4, E5, E6, F9, F10, F11, F17, F18, F19, H5, H6, H7, H8, H9, H10, I8, I9, I10, I11, M3, M4, M5 O13, O14, O15, O22, O23, O24 O25, O26	12/10/85
E7, E10, F1, F2, F3, F4, F8, F16, F20, H1, h2, H3, H4, O16, O17, O18, O19, O20, O21	12/11/85
F12, F13, F14, F15, I1, I2, I3, I4, I5, K1, K2, K5, K6, K7, K8, M1, M2, M6	12/12/85
F5, F6, F7	12/17/85
K10, K11, P1, P2, P3, P4, P5, P6, P7, P8	12/30/85
D1, D2, E9, I6, I7, K3, K4, K9	12/31/85
L13, L14, L19, L20	01/03/86
Ell	01/27/86

Table 2

Nuodex Inc. Fords, New Jersey

ECRA Ground Water Sampling Summary

Monitoring Well	Sample Date
17A, 17B	12/3/85
B7S, B7D, B8S, B8D, 25S, 25D, 25AS, 25AD, 30S and 30D	12/4/85
B3, B4, 6S, 6D, 21D, 22A, 22B, 26, 27S, 27D, 28S, 28D	12/5/85
31S, 32D, 33S	12/6/85

21 Savapled

P0= p

THELF 3	MOODEX ~ 8	ORDS : HA	TER LOVEL	ELEVATION	DATA FOR S	HALLOH GRO	UNDHATER H	ONITORING	HELLS		
MELL DESTONALTON ARABARARAKANAKANAKANA	**********		******	********	*******	********	*******	******	*******	********	(KXXXXX
MOLE DESIGNATION	B-43	B-195	. B-63	B-75	: H-85	: B-9	; R-11	8-16B	B-17B	B-20B	B-21B
CASING ELEV. (MSL)	13.58			11.54					,-		10.25
GRHOF ELEV. (MSL)	11.30					-	•	•	•		8.65
			:			:		:		:	
			:	: :	:	:		:			
ĸ×ĸ₽₩Ħ₩₩ŔŔĦĸĸĸ₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	********		: ::::::::::::::::::::::::::::::::::	*********		Rennember	:	**********	******		******
DATE 12/3/85 DEPTH TO WATER BELOW GRADE (FT.)	1.00	5.66	3.23	0.61	1.26	1.11	2.27	1.31	1.66	1.75	-0
DEPTH TO HATER BELOW FOC (FT.)	3.28	6.79	5.00	2.82	5.80	2.22	3.50	6.12	3.62	3.09	
HATER LEVEL ELEV. (MSL)	10.30	7.45	8.59	8.72	6.98	8.95	7.04	11.96	2.37 	7.64	
DHFE 12/9/85	0.43	F 40		2.24							· · · · ·
DEPTH TO MATER BELOW GRADE (FT.) DEPTH TO MATER BELOW FOC (FT.)	0.67 2.95	5.68 6.81	3.31 5.08	2.21 4.42	4.74 6.28	1.81 2.92	2.14 3.37	4.74 6.52	1.71 3.67	1.73 3.07	~0.03
HATER LEVEL ELEV. (MSL)	10.63	2.43	8.51	7.12	6.40	8.25	7.17	11.56	7.32	7.66	8.66
DATE 12/17/85											
DEPTH TO MATER BELON GRADE (FT.)		5.80	3.40	2.45	5.10	2.28	2.29	5.10	1.81	1.82	0.03
PEPTH TO MATER BELOH FOC (FT.)	3.09	6.93	5.47	4.66	6.64	3.39	3.52	6.00	3.77	3.16	1.63
ARTER LEVEL ELEV. (MSL)	10.49	7.31	8.42	6.88	6.04	7.78 	7.02	11.20	7.22	7.57	8.62
HEFTERFERINFREREDERREFERINFRER HELL DESIGNATION	8-558 :	B-2352	ния в на на на на на на на на на на на на на	HH-25AS	********* MH-275	********* HH-285	********* HH-295	**************************************	MH-31S	HH-33S	£
(ASING ELEV. (HSL)	10.34	8,97	12.91	12.97			15.10	11.40	10.93	11.43	
RADE ELEV. (MSL)	8.83	7.86	11.33	11.29	9.90	•	15.46	9.66	9.98	9.67	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,											, ,

DATE 12/3/85 1.73 6.05 4.14 DEPTH TO HATER BELON GRADE (FT.) 0.87 0.600.50 0.67 -0.276.14 1.98 2.48 2.10 3.53 0.355.78 3.47 7.00 5.90 DEPTH TO MATER BELOW FOR (FT.) 6.99 9.23 7.98 9.32 7.93 3.93 5.53 10.23 10.79 HATER LEVEL ELEV. (MSL) 12/9/85 DATE 6.03 0.840.52 6.23 1.80 4.84 0.37 0.51 0.61-0.14 DEPTH TO MATER BELOW GRADE (FT.) 1.95 2.49 2.25 Ü. 48 5.87 3.54 6.98 6.60 DEPTH TO MATER BELOW TOUR FT.D. 1.88 3.47 50.5 10.22 9.29 2.85 9.23 7.86 4.83 10.72 HATER LEVEL ELEV. (HSL) 12/12/85 DHIE 6.36 2.23 6.20 DEPEN TO MATER BELOW GRADE (FT.) 0.551.01 -0.05 1.16 0.63 0.763.97 7.15 CETAL DOT HOUSE RELIGIE OF HITSE 2.06 2.43 2.74 2.31 3.62 0.57 6.002.76 2.43 3.78 8.28 9.10 ARRES LEVEL FLEV. CHSL) 6.85 10.4710.66 9.14

[&]quot;: - " signifies no data available (mell not accessible)

TABLE 3 Continued	NUODEX -	i maya . Mil			DHIN FOR DE	EP GRUUNDI	antek unati	FORTING HELL	.S	
YNYD OUGHUUNNYN YN YN NEDDARWYN AR HARRAN YN D MELL DESIGNATION	8-20 - 8-20	+++4449#44 : 6-50			8-8D :	B- LUA :	B-13	**************************************	€######## B~17A	********* 8-20A
CASING ELEV. CMSL)	13.48		13.43				13.56	17.89	9.90	10.93
GRADE ELEV. (MSL)	11.25	•	•	9.34	•	9.84	12.57	16.26	9.01	9.40
				:		;				,
			:							
***************************************	PREBESSE	*********			********					*****
IATE 1223285 BEPTH TO HATER BELOH GRADE (FTs)	0.76	9.24	2.58	0.76	6.04	1.68	7.96	4 70	7.00	
DEPTH TO HATER BELOW TOC (FT.)	2.49	ان . 10	9.10	4.27	7.76	2.51	8.95	4.79 6.42	3.99 4.88	6.10 7.6
MATER LEVEL ELEV. (MSL)	10.99	3.80	4,33	8.58	5.01	8.16	4.61	11.47	5.02	3.30
PATE 12/9/85										
EPTH TO HATER BELOW GRADE (FT.) LPTH TO HATER BELOW TOO (FT.)	0.76 2.49	8.46 10.14	7.48 9.60	0.63 4.14	6.06	1.46	7.93	4.84	4.21	5.2
HIER LEVEL ELEV. (MSL.)	10.99	4.58	4.43	8.21	7.78 4.99	2.29 8.38	8.92 4.64	6. 4 7 11. 4 2	5.10 4.80	6.7 4.1
AFE 12/17/85										
EPTH TO HATER BELOW GRADE (FT.)	0.79	8.45	2.87	0.80	6.24	1.89	8.19	4.94	4.52	5.3
EPTH TO WATER BELOW TOC (FT.)	2.52	10.13	9,39	4.31	8.46	2.72	9.18	6.57	5.41	6.9
HTER LEVEL ELEV. (MSL)	10.96	4.59	ৰ.ua 	8.54	4.31	7.95 	4.38	11.32	4.4 9	1. U
HIER LEVEL ELEV. (MSL)	10.96	4.59 	4.04	8.54 	4.31 	7.95 	4.38 	11.32	4.4 9	4.0: *******
наровиянинарримарияный имосич FLL DESIGNALION :	10.96	i e a p a p e a a a	*******	*********	4.31	********	********	**********		4.0)
ячэ•кячунняйчэнччэнняя дам««» дам FLL (VESIGNALION :	(PPREFERR	1543435466 8-2211	*#**#*#*** MH-250	ГУАРНИКИХЪЗ : MH-,15AD : :	(********** HH-26 	**************************************	********	**********	######################################	(******* M4-320
STING ELEV. (MSL)	(PÞRKÞFKKK) R-21A :	8-220 10.84	**************************************	**************************************	######################################	**************************************	**************************************	########## MH-29D :	######################################	(XXXXXXX)
ячровяченняченнячення видеожана FLL (PESIGNATION : 	8-21A :	8-220 10.84	**************************************	**************************************	######################################	**************************************	**************************************	15.22	######################################	13.50
ячровяченняченнячення видеожана FLL (PESIGNATION : 	8-21A :	8-220 10.84	**************************************	**************************************	######################################	**************************************	**************************************	15.22	######################################	13.56
##POR##################################	8-21A :	8-220 10.84	**************************************	**************************************	######################################	**************************************	**************************************	15.22	######################################	13.50
##P*##################################	8-21A :	8-220 10.84	**************************************	**************************************	######################################	**************************************	**************************************	15.22	######################################	13.50 13.50 12.57
RAPORRAPHENERPRANCE AND FILL (PESIGNATION ASING ELEV. (MSL) RADE ELEV. (MSL) HARRING ELEV. (MSL) 12/3/85 EPTH TO MATER BELON GRADE (FT.)	8-218 10,-91 8-65	8-220 10.84 8-80	13.72 11.30	12.90 11.22	10.40	9.93	9.82 	15.22 15.51	9.70 9.70	13.56
RAPPERARE RELOW CO. (FT.) RAPPERARE RELOW CO. (MSL) RADE ELEV. (MSL) RAPPERARE RELOW CRADE (FT.) EPTH TO WATER BELOW TOC (FT.)	8-218 10.91 8.65 	8-220 10.84 4.80	13.72 11.30 11.30	12.90 11.22 11.22	10.40 : : : : : : : : : : : : : : : : : : :	9.93: 	9.62 9.62 9.07 	15.22 15.51 15.42 15.51	9.70 9.70	13.56 12.57 14-320 13.56 12.57 12.57
RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RATE 12/3/85 EPTH TO MATER BELON GRADE (FT.) RATER LEVEL ELEV. (MSL) ATE 12/9/85	8-65 10.91 8-65 8-65 8-85 8-85 8-85 8-85 8-85 8-69 5-22	10.84 10.84 10.89	13.72 11.30 1.30 0.16 2.58 11.14	12.90 12.90 11.22 11.22 11.23 1.81 11.09	10.40 10.40 10.40 10.40 10.40 10.40	9.93 9.93 9.93 9.93 9.93	9.82 9.82 8.07 8.07 ************************************	15.22 15.51 15.51 16.51 16.51 16.51 16.51 16.51 16.51 16.51	9.70 10.95 9.70 9.70 9.70 9.70	13.50 13.50 12.56 12.56 12.56
RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) RADE ELEV. (MSL) REPARTMENT OF TOP TOP TOP TOP TOP TOP TOP TOP TOP TOP	8.65 10.91 10.91 8.65 8.65 3.43 5.69 5.22	10.84 10.84 8-226 10.84 8.80	13.72 11.30 11.30 0.16 2.58 11.14	12.90 12.90 11.22 11.22 0.13 1.81 11.09	1.43 3.11 8.97	9.93 9.93 9.93 9.93 9.93 1.00 3.56 8.93	9.02 9.02 0.07 8.07 8.07 8.07 7.72 8.10	15.22 15.51 15.51 6.93 6.64 8.58	9.70 10.95 9.70 4.87 6.08	13.56 12.57 12.57
RAPPRAGRANAR PRAGRANA	8-65 10.91 8-65 8-65 8-85 8-85 8-85 8-85 8-85 8-69 5-22	10.84 10.84 10.89	13.72 11.30 1.30 0.16 2.58 11.14	12.90 12.90 11.22 11.22 11.23 1.81 11.09	10.40 10.40 10.40 10.40 10.40 10.40	9.93 9.93 9.93 9.93 9.93	9.82 9.82 8.07 8.07 ************************************	15.22 15.51 15.51 16.51 16.51 16.51 16.51 16.51 16.51 16.51	9.70 10.95 9.70 9.70 9.70 9.70	13.50 12.56 12.56 12.56 12.56 12.56 12.56 12.56
REPORTER SELON GRADE (FT.) RETE 12/9/85 EPTH TO MATER BELON GRADE (FT.) RETE 12/9/85 EPTH TO MATER RELON TOC (FT.) RETE 12/9/85 EPTH TO MATER RELON TOC (FT.) RETE 12/9/85	8-218 10.91 8.65 8.65 3.43 5.69 5.22	8-228 10.84 8.80 8.80 3.15 5.11 5.23	0.16 2.58 11.14 0.26 2.68 11.04	12.90 12.90 11.22 11.22 0.13 1.81 11.09 0.16 1.84 11.06	10.40 10.40 10.40 10.40 10.40 10.40 10.40 10.40 10.40	9.93 	9.82 9.82 8.07 ************************************	15.22 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51	3.62 4.87 6.08	13.56 12.56 12.56 12.56 12.56
REPORTER RELOW GRADE (FT.) RETE 12/9/85 EPTH TO MATER BELOW TOC (FT.) EPTH TO MATER BELOW GRADE (FT.) EPTH TO MATER BELOW GRADE (FT.) EPTH TO MATER BELOW TOC (FT.) ATER LEVEL ELEV. (MSL) RETE 12/9/85 EPTH TO MATER BELOW TOC (FT.) ATER LEVEL FLEV. (MSL)	8-218 10.91 10.91 8.65 	8-228 10.84 8.80 8.80 3.15 5.11 5.73	0.16 2.58 11.14 0.26 2.68 11.04	12.90 12.90 11.22 11.22 0.13 1.81 11.09 0.16 1.84 11.06	12.08 10.40	######################################	9.82 9.82 9.07 8.07 ************************************	15.22 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 16.89 8.33 7.18	9.70 10.95 9.70 9.70 3.62 4.87 6.08 3.60 4.85 6.10	13.56 12.57 12.57 12.57
RASING ELEV. (MSL) RADE ELEV. (MSL) RABBERRERERERERERERERERERERERERERERERERE	8-218 10.91 8.65 8.65 3.43 5.69 5.22	8-228 10.84 8.80 8.80 3.15 5.11 5.23	0.16 2.58 11.14 0.26 2.68 11.04	12.90 12.90 11.22 11.22 0.13 1.81 11.09 0.16 1.84 11.06	10.40 10.40 10.40 10.40 10.40 10.40 10.40 10.40 10.40	9.93 	9.82 9.82 8.07 ************************************	15.22 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51 15.51	3.62 4.87 6.08	13.50 13.50 12.56 12.56 12.56

		OPDS : WAT		ELEVATION D	ATA				
				1 MW-30 1					*
	14.51	19.56 i	13.55	12.05	10.56	11.05	14.72	19.89	12.10 1
RADE ELEV. (MSL)	_			0.42	•	•	12.57		9.75 i
TIE 12/3/85 EPTH TO WATER BELOW GRADE (FT.) EPTH TO WATER BELOW TOC (FT.) TER LEVEL ELEV. (MSL)		5.28 8.65 9.91		0.97 4.60 7.45	1.89 3.95 6.61	1.37 3.14 7.91	3.44	5.38 9.00 9.89	2.95 5.30 6.80
ATE 12/9/85 EPTH TO HATER BELOW GRADE (FT.) EPTH TO HATER BELOW TOC (FT.) ATER LEVEL ELEV. (MSL)	2.70 1.65 9.86	5,53 8,90 9,66		1.08 4.71 7.34	1.87 3.93 6.63		3.17 5.32 9.40	5.63 9.25 9.64	3.12 5.47 6.63
NTE 12/16/85 EPTH TO WATER BELOW GRADE (FT.) EPTH TO WATER BELOW TOC (FT.) ATER LEVEL ELEV. (MSL)	2.7 1 1.69 9.82	5.75 9.12 9.44	2.72 6.35 7.20	1.32 4.95 7.10	2, 15 4, 21 6, 35	1.62 3.39 7.66	3.22 5.37 9.35	5.86 9.48 9.41	3.56 5.71 6.59

De S

TABLE 4	SUPPERY AREAS "	A" AND "B"	RIPLE AND	LYTICAL R						
NON HIGHEN REGISTER NUMBER NUMBER NUMBER NUMBER NO.	Aecenener:		00000010001 A		HOLIDERHEER H		rindrik atara at B-Erist I		GRANISKAN S B-HARTHA	
SAMPLE POINT	.;			R2	 : B1	: 82 :	83		B5	B6 :
SAMPLE DEPTH	-; : 0"-6"			: 18"-24"		: ;		!		
эмигсе осгун чэг нан нэн нааний нап лий РАРАМЕТЕRS Нэч нан хэн явиягий нан яви	00.1090001						OCIOCIA MIRRI RE	NEL KONSK KORTE SE	K KRIMIKK K	HXXXXXXXXXX
PRIORITY POLLUTANT VOLATILE ORGANICS:									,	
TOLUENE	NA	MD	NA	0.65	NO	MD	MD	NO	27.00	170.00
METHYLENE CHLORIDE	MO	ND	NO	MD	1.57	18.40	0.60	0.42	NO	ND
PPIORITY POLLUTANT BASE NEUTPALS: ************************************	14.00	NA	ND	NA	ND	77.00	300.00	81.00	MO	MD
INOPGANIC COMPOUNDS: NEW TOWARD NAME OF THE PROPERTY OF THE P	0.74	MA	мЪ	NA	31.00	39.00	33.00	9.90	29.00	2300
pH (UNITS)	6.70	MA	4,40	MA	6.97	6.85	6.36	6.47	4.95	3.91
TOTAL PHOSPHATE	259.00	MA \	44.00	NA	93000.00	45000.00	15000.00	15000.00	260000.0	0.00000
PHENOLS	Ю	MA	MD	ĦĄ	157.00	173.00	60.00	15.00	81.00	63.00
APSENIC	11.00	MA	MD	MA	190.00	130.00	130.00	47.00	75.00	140.00
BERYLLIUM	NA.	NA	MA	KA	10.00	7.80	2.20	2.50	5.80	7.00
CADRIUM	11.00	NA	3.90	MA	21.00	16.00	5.40	4.90	5.80	16.00
CHROMIUM	44.00	MA	11	MA	63.00	200.00	76.00	17.00	150.00	1200.00
COPPER	920.00	MA	27.00	MR	6000.00	1300.00	160.00	100.00	190.00	1 100 .00
LEAD	500.00	MA	40.00	NA	3900.00	1300.00	220.00	110.00	370.00	2000.00
MERCURY	0.59	MA	0.27	MA	. 11.00	12.00	0.43	0.15	0.35	15.00
NICKEL	43.00	MA	MO	MA	200.00	160.00	33.00	32,00	310.00	330.00
SILVER	MA	MA	MA	HA	52.00	39.00	MO	MD	MO	#D
ZINC	2130.00	MA	13.00	NA	1900.00	2700.00	170.00	220.00	.1100.00	1200.00
PESTICIDES: New Name of the Control	0.80	MA	MD	MA	MA	MA	MA	NA	, NA	ma.
4,4-DDT	0.67	RA	MD	MA	MA.	MR	RA	MA	MA	RA
PCB1S: NERNER APOCHLOR 1242	2.10	MA	ND	MA	HA.	MA	MA			
										<u>.</u>

4.00

ĦΒ

MA

MA

MA

MA

AROCHLOR 1254



TRBLE 5

NUODEX, INC. - FORDS, NEW JERSEY SURVINCY OF SOIL SAMPLE ANALYTICAL RESULTS RERS "A" AND "B"

NAME AN INCOME NAME AND ESSENTIAL MARKET.		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX								
SPMPLE AREA			A		B-WEST L	AKE :	B-ERST U	1KE :	B-HNKI 11 H	NR'S POND
SAMPLE POINT	·	A1	1	R2	; B1 ;	B2 1	83 :	B4 :	85	: B6
	0"-6"			: 18"-24" (XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		;	;	;		********
पना मणपर मधानामात्राता साम्य साह्य स PRRAMETERS समाम अभावतास समाजनात्र स्थान समामा	}	i are reasers	*****		**********					
TBRARY SEARCH PERMICS (VOLATILE PERMIC FRACTION):		· ·								
RCETONE	MA	MR	MA	MA	17.00	10.00	8.20	2.10	NO	MD
BENZALDENYDE	MA	MA	MA	MA	ND	ND	MD	MD	12.00	550.00
BENZOIC ACID	KA	NA	NA	NR	·ND	NO	MD	ND	270.00	3600.00
BENZYL ALCOHOL	MA	MA	NA.	MA	MO	MD	ND	MD	47.00	700.00
METHYLETHYL KETONE	MA	MA	MR	MA	4.50	32.00	NO	0.32	MD	MD
CHLOPOTOLUENE ISOMER	MA	MA	ЩЯ	MA	10.00	86.00	ND.	ND	MD	MD
DIMETHYL CARBONATE	. NA	. NA	MA	MA	NO	ND	0.54	MD	MO	ND
2,2,3-TRI METHYL BICYCLOK2.2.12HEPTANE	MA	MA	MA	MA	0.83	NO ·	MD	MO	MO	ND
JAKNOWA HYDROCARBON	, M A	MA	MA	MA	NC .	16.00	2.20	MD	NO	MD
LIBPARY SEARCH ORGANICS (BASE NEU- TPAL/ACID EXTRACTABLE FPACTIONS:				,						
N'OROXY BENZALDEHYDE	NA	199	ĦA	MA	MD	MD	MD	MB	46.00	ND
2-METHAL-1- PROPENE TETRAMER	, KA	MA	MA	MA	MO	47.00	ND	MD	MO	NO.
POPENE TRINER	MA .	MA	MA	MA	NO	31.00	MD	MO	HD	MD .
,1-0XY (BIS) SENZENE	MA	MA.	MA	M	210.00	HO .	MD	MD	MD	MD
HTHALATE	MA		MA	MA	MD	MO	54.00	MD	MD	MD

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOULD ABOUT.

^{2.} ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;MA" SIGNIFIES NOT AMALYZED.
4. "MO" SIGNIFIES NOT DETECTED; SINCE DETECTION LINITS WARY, SEE AMALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

SPINPLE AREA D Ε 1 E1-3 1 E4-6 1 : E10 92 ; E11 SAMPLE POINT : MH-280 ; 01 ŀ E7 : E9 1 8'-10' | 8"-6" | 18"-24" | 0"-6" | 18"-24" | 0"-6" | 0"-6" | 0"-6" | 0"-6" | 12"-18" | --- | SAMPLE DEPTH PARAMETERS MAKE MAKE MAKENTA MAKE KING WOLATTLE OFFICE CS: METHYLENE CHLORIDE NO. MA 0.30 100 0.19 m NR. 0.25 0.13 ĸ WA 0.011 **ACETOME** m χń M MA M MA 100 0.065 NO PRIORITY POLLUTANT BASE NEUTRALS: MAN MANIONA NON AMENAN BIS (2-ETHYLHEXYL) 1.80 13.00 PHTHALATE INOPORMIC COMPOUNDS: CYANIDE NO. MA MA MH . MA pH (UMITS) 3.70 8.00 MA 6.10 MA MA NA MA MA MA NA PHENOLS 0.29 MR m m m WA MA MA NΑ MA MA **P**RSENT 0 18.00 w CADMI UN 1.40 MA . **N**A NR MA MA CHPOMIUM 21.00 . NA MA m MR MA MA MA m NA COPPER . 2.90 MA MR MA MA MA Mi MA MA NFi LEAD 13.00 m MA m MA m m MA MA WR WA MERCURY 18.00 MЯ m MA MA MA m MA MA m W NO CKEL 24.00 m m MA 1 m m m HЯ ЖA SILVER 0.08 100 m M٩ MA ZI NC 98.00 MR m MA m m MA ЩA PCP'S: -TOTAL MA MA Ю Ю MA NA.

WOODEX, INC. - FORDS, NEW JERSEY

MERS "D" AND "E" BEHEROOGNOOGNOOM

SRIPPRY OF SOIL SIMPLE AMPLYTICAL RESULTS

RE HOUGHOUR HOUR TOUGHOUT HOLEHOUGE TOURT BOOK FOOT PROCESSOR HOLE HE HE

TRBLE 6

LIBPAPY SEAPCH ONGAMICS CHOLATILE ONGAMIC PRACTIONS:

METHYLETHYL PETONE

T.

ю

0.12

m

MP

0.091

0.078

AN ETOME

035

- 11

MA

TABLE 7

Market Attacked the

MUDDEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE AMPLYTICAL RESULTS AREAS "D" AND "E"

SAMPLE AREA			D		. 1				Ε		
SAMPLE POINT	MH-280	;	D1 :		02	E1-3	; E4-6	E7	; E9	: E10	E 11
OMPLE DEPTH	8'-10'	: 0"-6"	: 18"-24" ;	0"-6"	: 18"-24"	0"-6"	: 0"-6"	0*-6*	: 0^-6"	12"-18"	
РПР АМЕТЕРS «Ин арадидинанда има иман	=		,	*******	*********			,			
LIBPARY SEARCH OPCANICS (VOLATILE OCCANIC FRACTION):	-										
HEYANE	ND	MP	0.83	NA.	0.928	MA	MA	MA	MA	NA	NA
METHYL CYCLOPENTAME	NO	MA	0.08	NA	MO	MA	MA.	NA	NA	MA	NA
3-HETHYLPENTANE	NO	MA	0.027	MA	HO	MA	NA	NA.	MA	NA	NA
(TPIFLUOROMETHYL) RENZENÉ	MD	MA	0.055	NA	HO	NA	MA	, NA	MA .	NA	NA
LIBPARY SEARCH ORGANICS (BASE NEU- TRAL/ACID EXTRACTABLE FRACTIONS): >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	MD	0.30	MA	N D	188	NA.	NA.	M A	NGA .	NA	NA
HI/OROCARBORS (TOTAL)	MO	1.63	MA	15.30	, N A	MA	#A	HA		MA	NA
TETRACHLOROBENZENE ISOMER	MD	0.30	MA	ND	MA	NA	MA	MA	MA	, NA	NA
2,4,5-TRICHLORO- BENZALDEHYDE	NO ,	0.30	NA .	10	MR	MA	NA	MA	MA	MA	NA
MKNOWNS (TOTAL)	10	4.67	MA.	10.20	MA.	MR.	#A	MA.	100	MA	NA

- 1. ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOUR ABOVE.
 2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.
- 3. "NA" SIGNIFIES NOT AMALYZED.
- 4. "NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHENT

TRBLE 8, MUODER, INC. - FORDS, NEW JERSEY SUMMERY OF SOIL SAMPLE AMPLYTICAL RESULTS AREA 'F" AP-4>P-WH-4 MAKED HACKERSKARKERSCHARK HER SOON OF 我们,我不是不是不是我们,我们是我们的人,我们也不是我们的人,我们的人,我们们就是我们就是我们的人,我们的人,我们就是我们的人,我们的人,我们的人,我们就是我们的人,我 "我们的人,我不是不是我们的人,我们就是我们是我们的人,我们就是我们的人,我们就是我们是我们的人,我们就是我们的人,我们就是我们的人,我们就是我们的人,我们就是 SEMPLE PREP SHAPLE POINT 1 F5 1 F6 1 F7 1 F3 1 F9-11 1 F12-14 1 F15 : 1 0"-6" (18"-24") 0"-6" (18"-24") 0"-6" (18"-24") 0"-6" (18"-24") 11"-24") 11"-24" (11"-24") 0"-6" (18"-24") 0 SPAPLE DEPTH orregraden un un inter de comportant de la propositation de la compositation de la propositation de la pro PI-DPMETEDS SHERRESH ARREST FOR PARTY PARTY PRICEITY POLLUTANT SHEE TEUTRALE: *************** SHIFFSCERE PENEDCAD ANTHROCENE 0.27 0. 193 NB FREEDOCAD-PYPENE CM 0.31 MA 9.15 33 24 10 ΝA PENZOG, N, LOPERYLENE Ю 9.12 70 NA NB 59 N9 CHRYSEME 0.40 MD 140 KA Ю NΩ 33 0.062 ND. 39 NB DIBENZO : A NORNTHRACENE 0.:6 DI-n-3077LPHTHALAFE 0.073 2.00 0.041 0.45 lot 79 0.063 ю MO ND FLOCRANITHEME NA , KA 0.21 ND NA 10EN9(1,2,3-cd) PYRENE 0.11 加 63 MA 0.32 NO PHENENED RENE ND MA MA NA JW Ю 2.50 ND 0.085 MA MA NA PI RENE IMPROBREC COPPOUNDS: HERRETHER HERE 9.20 9.20 8.70 5.80 MB pH (UNITS) 760.00 180.00 220.00 155.00 400.00 M TOTAL PHOSPHATE 345.00 Na PETROLEUM HYDROCARBONS NA. BA MĐ 0.50 0.30 0.40 0.20 11.00 t(A PHENOLS PCB'S: 85.5338 TOTAL

The state of the state of

意味である おおせん 東西でする

Dust

TRBLE 8 NUCCEEK, INC. - FORDS, MEN JERSEY continued SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS RREA "F" INCOMENSATION AND ARREST MARKET AND ARREST ARREST AND ARREST ARREST AND ARREST A HE REKERBER HEIN HEIN HER HER BEREFEREN HERDER HERBER HERBER HERBER HER BEREFEREN HER BEREFEREN HER BEREFEREN HER HERBER HERBER HER HERBER HER SAMPLE AREA F SAMPLE POINT F1 Ð 1 F5 1 F6 1 F7 1 F8 1 F9-11 1 F12-14 F4 I F15 1 IF17-19 ! F20 ! SRMPLE DEPTH 1 0"-6" 118"-24": 0"-6" 118"-24": 0"-6" 118"-24": 0"-6" 118"-24": MIPE ! MIPE ! MIPE ! HIPE | 18"-24": 0"-6" | 0"-6" | 18"-24": 0"-6" | 0--6" | 18"-24"; 0"-6" | 0"-6" | PARRMETERS LIBRARY SEARCH ORGANICS CUCLATILE ORGANIC FRACTION: **IOOLYMPIO** ACETONE 7.70 CHLOROCYCLOHEPT ATRENE ISOMER CHLORO-FOLUENE ISONER 500.00 LIBRARY SEARCH ORGANICS CHASE NEU-TRAL FRACTION: HER PLEASURE HAVE HAVE TO HAVE A CHLORO (CHLORONE THYL) 11.40 BENZENE I SONER CHLORO (CHLOROME THYL) BENZENE I SOMER 140 CHLOROMETHYLDICHLORO-BENZENE I SONER CHLOROMETHYLDICHLORO-9.60 NA. ю KA KA NA BENZENE I SOMER CHLOROTOLUENE I SOMER ĸя 102.50 N/A MO CHLOROTOLUENE I SONER · XA NA 34, 10 MA NA 5.36 MA 0.21 5,5-01HETHYL-2(5h) 0.44 MA 11.40 ND MA **FUR ANOME** 1-REXADECAMOIC ACID 140 KD 2.20 KA 0.32 POLYMUCLEAR AROMATIC 0.66 .NO Ю MYDROCARBONS TETRROCCRNOIC ACLO KO 0.11 MЯ 4-KTEFRRMETHYLBUTYL) 0.55 PHENOL ISOMER TETRAMER OF 2-METHYL-1 0.44 KO PROPERE TRIOCTYLESTER OF 643.00 PHOSPHOREC ACED UNKNOWES (TOTAL) 8.69 2.68 84.20 8.54 85.80 MA KA KD KA #0A 0.32 ND MA UNSATURATED HYDROCARBONS IND ŧФ N/A



TABLE 9	HUDDEX, IN SUPPRRY OF AREA "6"	SOIL S	AMPLE AMAL	YTICAL RE				
HAMMANDHI KWANDENKA KORKO SAMPLE AREA	KX XXIBBU(XXX	XIDI HOCI X	DOLUGIE NOT HE	BETGER TOCKTON G			1964 1041 19	OL HOER HOUR
SAMPLE POINT	61-2		: 63 :	64 ;	65-6 ;	67-6	}	69
SAMPLE DEPTH		8'-24"		0"-6" :		0*-6" ::		
өөч хихэвэх чахэхэх хих хихэх PAPAMETERS	PX XXXXXXX XXX :	*15 101	******	HERRE HERE	M M M M M M M M M M	(1 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(RUCH RESERVE	HE REE STEE
******************	×							
PRIMRITY POLLUTANT								
POLATILE ORGANICS:								
######################################	NB	MD	MA	MA	MA	MA	.081	MA
PPI OPITY POLLUTANT				100				
EFSE MEUTRALS:								
BEMZO(3)ANTHRACENE	ND	MA	0.77	MD	MD .	MD	MA	NA
PENZOGOPYRENE	MD	NA 	0.65	ND	NO	MD	NA 	NA
PENZO(b.K)	NO .	MA	1.60	MD	1.24	MD	MA	MA
FLUMPANTHENE								
BENZO(g,h,1)PERYLENE	MD	MA	9 ,35	MD	MD	MO	MA	ĦŘ
CHRYSENE	ND	MA	0.89	ND	NO.	HC	MA	NA.
LURPANTHENE	ND	NA	0.87	MD	MO	#0	MA	MA.
TANCHO-1 2 3	MO	MA	0.40	MD	ND	#D	MA	 NA
INDENO-1,2,3 (c,d)PYRENE	· NU	mn	0.40	NU	NO.	M U	MD.	R.F.
	ND	MA	0.30	MD	10	MD	 NA	MA
PV P ENE 	. MD	MA 	0.75	MD	NO 		MA 	
INGPORNIC COMPOUNDS:								
本 D D 名 M M M D M A M M A M M M M M M M M M M M								
pH (UMITS)	6.30	MA	6.40	7.10	5.80	7.80	MA	5,20
APSENI C	NA.	MA	7.30	5.90	5.70	MA:	MA	MA.
CADMIUM	NA	MA	MD	3.10	2.30	HA	MA	MA
CHROMIUM	MA	MA	35.00	1440.00	203.00	#A	MA	
COPPER	NO.	MA	19.00	198.00	372.00	MA .	` HA	
LEAD	MA	NA	26.00	115.00	248.00	MA .	RA.	MA
MERCURY	MA	MA	0.08	0.20	0.20	MA.	MA	
NICKEL	NA	MA.	MD.	32.00	44.00	NA	RA RA	MA.
SILVER			MD.	MD	1.00		MA	
								
ZINC	NA 		42.00	656.00 	924.00		MA	
OFGANICS:								
EPERATEM INDOCUORDONIC				46				
PETROLEUM HYDROCHRBONS	MA	MA	. MD	10.00	112.00	MA	NA	635.00

UNKNOWNS (TOTAL)	1.20	HD	2.60	4.20	6.80	21.00	MD -	MA
TPICHLOROICTRICHLORO- PHENOXYSHETHYLI BEN- ZENE ISONERS	# 0	MD	MD	MO	MD	8.90	#0	MA
PCB ISOMERS (TOTAL)	NO.	NO	MD	0.83	, MD	MD	#D	MA
SENEDICARBOXYLIC ACID				****				
3-MITRO-1,2-BEN-	ND	MD	MD	0.21	MD	ND	MD	ĦA
HYDROCHRBONS: KTOTAL)	0.66	MD .	2.20	MD	2.40	MD	MD	MA
OT CHLORD-TOLUENE	NO	MO	ND	MD	ND	2.20	MD.	MA
5.5-DIMETHML- 2.5h)-FURANOME	0.33	NO	0.60	ND	MD	MD	MD .	MR
1-CMLORO-2KTRI- CHLOROMETHYLOBENZENE	MO	MO	NO	MD	NO	4.50	MD	. NA
CHLOROMETHYL- DICHLORORENZEME	NO ·	NO	ND	MO	· MD	MD	MD	NA
PHOSPHATE (3:1)	mu							
BENZOFLOURINE ISOMER 	ND ND	ND ND	0.12 1:20	MD MD	ND MD	ND 	MD 	NA NA
ANTHRACENE-7-ONE								
LIBPARY SEARCH OPGHAICS: K+44444H+4## Th-BENZOED	ND	MD	0.12	ND	ND	MD ·	ND	NA
PHRAMETERS *>-***********************************	i i			,				
SAMPLE DEPTH	-	I SYNHHAY TO SA_	********	**************************************	********	######################################	1054 ·	**************************************
SAMPLE POINT	61-2		: 63 ; : 0"-6" ;		65-6	0"-6"		
SAMPLE AREA	 		: 63 ;	64 ;		67-	 8 ;	69
*>4*4****		KINKKK	RICK N. X X X X IO			***	***	A NAME OF PERSONS ASSESSED.
TABLE 9 Continued	NUODEX, IN SUMMARY OF AREA "6"				SULTS			

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOULD ABOUT.

^{2.} ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;MA" SIGNIFIES NOT AMALYZED.

^{4. &}quot;NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT.

TRBLE . 10 MUDDEX, INC. - FORDS, NEW JERSEY SUPPRRY OF SOIL SAMPLE ANALYTICAL RESULTS AREAS "H" AND "I" SAMPLE AREA . SAMPLE POINT ĸ H1 K2 1 H5-6 1 H7-8 1 H9-10 1 H11-12 1 : 0"-6" :18"-24": 0"-6" :18"-24": 0"-6" :18"-24": 0"-6" : 0"-6" : 0"-6" : 0"-6" : 0"-6" : SAMPLE DEPTH PARAMETERS NAME AND ADDRESS OF A PARTIES. PRIORITY POLLUTANT VOLATILE ORGANICS: HINK WHEN IBOU WHICH AND HOOK TOTAL PCB'S: 新典數 低高級 TOTAL MA MD 100 INORGANIC COMPOUNDS: ************* 8.90 NA pH (UNITS) 8.60 7.90 MA 8.60 MA NUODEX, INC. - FORDS. NEW JERSEY SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS AREAS "H" AND "I" gaa aankaa kadhot boo waaank kumber kadhadank madhak kad kek 法法国产业 直面的现在分词 化化物 化异性 化聚基 化邻基苯基 化双基 医电流 医抗性 医抗心性 医医血管病 医多生 化多电子化 SAMPLE AREA I 13-4 : 15 : 16 : 0"-6" :18"-24": 0"-6" :18"-24":18"-24": 0"-6" :18"-24": 0"-6" : 18"-24": 0"-6" : SAMPLE DEPTH KPEZEKEP 4 4 Z KEZ KEZ ock for i kingrock high hocker sign book sig shou krager karren fra al krager karren bes ker ker krager skra e PARAMETERS KAN KRUMAK KAN MAN MAN MIKAMA PRIORITY POLLUTANT WOLATILE ORGANICS: KNESPHER KREEKER METHYLENE CHLORIDE MA 0.10 0.13 0.17 0.16 2.00 PRIORITY POLLUTANT BASE MEUTRALS: 医软件 电有电压效应 医放射性纤维 电压器 TOTAL NO. ₩D. PCB'S: ERREER MA ma ĦŔ NO NO. INOPGAMIC COMPOUNDS: 英国教育者会会会会 医电影电影器 医甲酰基苯 pH (UNITS) 8.0

MUDDEN, INC. - FORDS, HEM JERSEY

SURVINEY OF SOIL SHIPLE MINLYTICAL RESULTS AREAS "AREAS "H" AND "I"

	ADLI NESERONA					I					
I1	I 1-2		13-4	1	15 ;	16	;	17		18-9	: I 10-11
	*********					~~~					
	•										
MR	10	M	0.062	0.066	MA	10	MA	3.30	MA	MA.	
MA	0.11	MA.	MC	MD.	MA	Ю	***	11.00	M	WA	
M	10	NA .	10	MD	ĦA	Ю	180	1.43	NA.	NA.	
MA	10	M	10	MD.	MA	MO	NA.	0.89	MA	MA	
MA	10	Î NA	, #0	10	MA	Ю	199	0.22	W	NA.	_
NA ,	io	MAR.	10	* D	BA	MD _j	MA	1. G	100	, NA	
NO .	MD		•	MA .	10	ж	NA	4.50	NEA .	MA	169
ND	MD	RA .	10	MA)	10	10	MA	3.40	MA.	MA	MA
Ю	MD	M		NA.	. 100	HD .	MA	2.55	10	MA	· 166
0.22	0.22	M	23.00	MA .	18	1.0	RA .	NO	MR	MA	MA
Ю	NO	m (-		MA	0.78	NA.	W	. 100
NO.	NO.	m	•			1ED	100	1.30	100	M	MA
1.30	1.30		369.00	•		4,30	MA.	9.40	MA.	MA.	NO.
	II 1 0""-6" (II II-2 0"-6" 0"-6" :1 1	II II-2 0"-6" 0"-6" : 18"-24"	II II-2 : I3-4 0"-4" 0"-4" : 18"-24": 0"-6" : 1 E HEESHEN MAN MAN MAN MENDOOM MAN MENDOOM MAN MAN MAN MEN MEN MA	NO NO NO NO NO NO NO NO	I1	T	I II II-2 : I3-4 : I5 : I6 : O"-6" O"-6" :18"-24": I0"-6" :18"-24": I8"-24": T II II-2 : I35-4 : I5 : I6 : I7 O''-6'' O'*-6* 118*-24*: O*-6* 118*-24*18*-24*: O''-6* 118*-24*! O''-6'' I3 REVERHEN KARA KARA KARA KOR BORDON KOR KOR KOR KOR KOR KOR KOR KOR KOR KOR	I	I I I I I I I I I I I I I I I I I I I	

^{1.} ONLY PROMETERS DETECTED IN AT LEAST ONE SHIPLE ARE SHOULD ABOVE.

^{2.} ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;WA" SIGNIFIES NOT ANALYZED.

^{4. &}quot;NO" SIGNOFIES NOT DETECTED; SINCE DETECTION LINETS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

TABLE 12	NUODEX, . SUPPPRY AREA "J"	OF SOIL	OPDS, NE SAMPLE A	DI JERSE BIALYTIC	y Pol Result	s
KHIR KHIRISHIR SHOKKIKIK KHIRI KKRI SAMPLE AREA	BEN NEGOBORN -	OOK HEBORNA		CR1868(1968 j	HEIGH HOM H HOM H	HMM AMW RA
SAMPLE POINT	n :	2	J3-		 : 55-	6 !
SAMPLE DEPTH	; •	18"-24"	0"-6" ;	18"-24"	: 0"-6" ;	18*-24";
WHEN WHITEM HERE SHEET SHEET PROPRETERS	eenuoeeoxx !	HORNEDHOU	(MENNING KI	OC 1000 KHO	NOCK NOCK HICK H	KNK RAFEE
MEN HER WINN WHEN WHEN MAN HER SERVICE	BI					
PRIORITY POLLUTANT VOLATILE ORGANICS: HYRKHHINGK HELEHUGK HEN BENZENE	NA	0.631	MA	ю	WA	ND
CHL OROFOR M	NA.	0.129	MA	MD	MA	MD
METHYLENE CHLORIDE	NA	0.955	MA	0.045	MR	ND
TOLUENE 1	MA	0.435	RA	ND	M A	MD
INOPGANI! COMPOUNDS:	3.00	198	M D	MA	M C)	MA
pH (UMITS)	8.41	HA	6.07	NA .	4,97	MA
ANTIHONY	13.00	198	MO	MA	MD	MA
APSENI C	0.40	198	2.10	MA	1.80	MA
CAOMINA	1.20	110	HD	NA	0.40	NA
CHROMIUM	13.00	.198	4.70	NR	5.90	. NA
COPPER	1900.00	M	12.00	NA	29.00	NA
LEAD	230.00	MB	6.40	MA	160.00	MA
MERCURY	0.70	MA	1.50	MA	1.70	MA
NECKEL	27.00	MA	3.60	MA	8.40	MA
SELENTUM	MD.	MA	ND	MA	1.10	MA
SILVER	2.40	NA.	HD	MA	HC)	MA
THALLIUM	8.40	- MA	NC	, MA	10	MA
ZINC	130.00	NA.	27.00	MA	60.00	MA:

.



.

j

MUDDEX, INC. - FORDS, MEN JERSEY TRBLE 12 SUPPORY OF SOIL SAMPLE AMALYTICAL RESULTS continued AREA "J" NOT A PERMIT OF MANUAL WAY WHEN THE MOVES AND ONCE AND MADE INCOMES AND MADE IN A MADE IN A MADE INCOME AND A MADE IN A MADE I SAMPLE RREA J3-4 J5-6 : JI -2 SAMPLE POINT 1 0"-6" :18"-24": 0"-6" :18"-24": 0"-6" :18"-24": SAMPLE DEPTH PARAMETERS . . HOW RADING WATERCOMERS IN SHARE LIBRARY SEARCH ORBANICS (VOLATILE ORBANIC FRACTION): MAN AMENDER MENMER MYN **RCETONE** 0.19 t.20 MA MD BENZALDEHYDE 40.00 Ю NA MD ------CHLORG-TOLUENE ISOMER ND . O NF: 100.00 -------2.2-DIMETHYL-3-METHYL- NA ND НO 10.00 ENE BICYCLO [2.2.1] HEPTRNE LIBRARY SERPCH OPERMICS CHASE MEU-TRALFACID EXTRACTABLE FRACTION: **其本点本本其本本并其或其其故者或其其其其其** DTCHLORG-TOLUENE 200.00 5200.00 MA ISOMERS. UNKNOWNS (TOTAL) 1900.00 MM 1700.00 MA MA

- 1. ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOUE.
- 2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.
- 3. "NA" SIGNIFIES NOT ANALYZED.
- 4. "NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT .

TABLE 13

NUODEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE MARLYTICAL RESULTS RREA "K"

		AREA "K							~~ 10000	CH K.W.OODE 101				Managara
HHIX XHIKIBIX XXXXHIX IOXX IOXXI SAMPLE AREA	1	DOX YEROCHEKY						(REAL PROPERTY.		
SAMPLE POINT	K1	-2	10-	-4	15-	6	K7 -	-8		(9)	K	10 ;	K1	.1 1
SPRIPLE DEPTH							_			: 18~24*;		_		18"-24";
PFRAYETERS REMEMBER NEW HER HER HENDE	1	SAA ASKA 18KA	KORENOR RAS	1 ADAN 1943 S	AGRICA FIRM		KAR RAKA	AR AMA REE	KRIA KRIARI			E-SIA FRE	***	***********
PPIORITY POLLUTANT WOLATILE ORGANICS: REFFERENCESTATES WEITHYLENE CHLORIDE	NA.	4.20	MA .	0.16	NA.	0.13	MA	0.38	MA	10	MA	0-12	NA.	0.21
														
PFIOPITY POLLUTANT BASE MEUTRALS: PMENGNTHPENE	130.00	NA	H D	MA	ND	169	ND	MA.	MD	NA.	 MD	WFI .	MD	NA.
	37.00	NA	HD	MA.		MA.	MD	NA.	HD	NR	HD		MD.	NA
PYRENE														
ІМОРОЯМІС СОМРОЦНОS:														
CYANIDE	2.00	NA	MD	MA	NO	169	MD	MA	M 0	NA	0.16	# 1	0.72	NA
PHENOLS	1.80	NA	1.30	#A	0.40	NA	5.20	NA	2.90	N A	3.80	MFR	7.50	NA
RPSENI (MD	MA.	8.10	*# 8	ND	MR '	MD	MA	2.90	XA	9.50	WR	5.80	NA
CHUMITH	MD	MR	ME)	HA	7.00	NA	MD	MA	MD	MR	"MD	₩i	3.00	NA
CHPOHIUM	NC	NA	15.00	MA	7.00	NA	5.00	NA NA	14.00	NA	17.00	₩ì.	15.00	MÅ .
CUPPER	8.00	NA	8.00	NA	NO	MA	13.00	NA.	8.00	NA.	9.50	NE	8.80	MÁ
LEAC	MO	MA	NE)	NA	NO	NA.	46.00	NA .	NC	NA.	52.00	NA	NO	NA
MERCURY	0.16	RA	0.90	MA	0.17	,ma	8.50	MA	1.00	MA	1.70	NA	1.50	NA
NI CHEL	MD	NA.	NO	MA	ND .	MA.	MD	MA	MD.	NA	12.90	MA	N()	NA
STUMES	ND	RA.	6.00	MA	NO	NA	MO	NA.	MD	MA	ND	MF	MD	NA
Z) N(13.00	- N R	6.00	MA	58.00	MA	39.00	MA	31.00	MA	40.00	N/A	28.00	NA
PESTICIDES:														
⊥ÚxiesHENE mesamene	MD	₩A	340.00	MA ·	1120.00	WA	27.00	NA	1500.00) NEA	905.00	MA	M D	NA
LIBRARY SEARCH OPGANICS (VOLATILE OFGANIC FRACTION):					• ,									
ED D THE SHE SHED PROPERTY														
ACETONE 	MA	# 0	MA	MD	NA	0.065	KA	0.23	NA .	100	NA.	M 0	MA	NO
METHYLETHYL KETONE	NA	WO .	NA 	MD	NA	HO	MA	NO.	MA	17.00	NR .	MO	MF	NC:
CHEORO-FOLUENE ISOMERS	NA	* 0	MA	MD	NA .	MD	MA	MD	MA .	400.00	NA	N C	MA	NO
1.2-01860#5-3- CHLOF3-PROPANE	NA .	#0	MA .	MD	NA	ND	KA	MD	MA	MD .	NA NA	MC	MR	NÇ.
45 + 44.5	NR	NC:	₩	500.00	t4A	MC .	NA NA	ND ND	NE.	MD	IRR	NC:	NF	r.08
										····	, 41 1	MU.		/5

2865

TRBLE 13 continued

HUDDEK, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS REER "K"

SPMPLE RREA	! ———.						K							
SPUPLE POINT	K	l-2 · 1	13	-4	15-	6 1	K7 -		K9		K	10 :	K1	1
		118*-24*	-											
BYK HECH KIBLIOGEROOLIGGBOU FREAMETERS BOLIOULOGEROOLIGGEROOLIGGBOU	:		er repek ro		AAAA SASI		ANTE ANTE ANT	K RAM RAM *	34 A.S.S.A.	ADDRESS RIVE	A REAL PROPERTY.		******	
IBRARY SEARCH IPSONICS (VOLATILE IPSONIC FRACTION): INSTRUMENT WELFERHEN A-DROCHESON	160	10	M A	ND .	NA	NO.	WA	но	NA	NO .	NG	NO.	MR	ND
HETHYL-2-BUTANONE		<u>~</u>	MA	MD	 NA		#A	- 		ND	MA	MC)	MA.	ND
METHYLESTER BUTANOIC	MA	10	N A	MD	NA	MD	MA	Ю	MA	NO 	NEA	ME)	MA	ND
ETHYL CYCLOPENTANE	MA	NO.	MA	62.00	MA	10	MA	HD.	MA.	10	MA .	MD.	ĦA	NO.
3-HETHYL PENTAME	MA	NO	MA	10.00	M	MO	MA	HD	100	NO.	MA	ND	MA	NO
TOTAL XYLENES	MA	MD.	MA	MD	, MA	MD	MA	MO	NA .	60.00	MA	MD	MA	ND
PAKNOWN ALKANE	MA	NO.	MA	MD	NA	10	MA	NO	MA	NO.	MA	ND	MA	. 1.00
MAKNOMN	MR	MD .	MR	100.00	NR :	MD	MA	ND	MR	HID.	MA	470.00	MA	ND
IBRAPY SEARCH M'SAMICS (BASE NEU- TPAL/ACID EXTRACTABLE TPACTIONS): MENERAL ALCOHOL	· H D	**	. ·	NA NA	NO.	NA NA	#D	Nea	MO	'NGA	. 11.00	₩A	NO	NA
CHLORO-FOLUENE ISOMERS	MD		MC NC	MA	NO NO	MA	MD	NA	MD	MA	17.00	MA	30.00	NA
(TOTAL)														
DE HUORMATOLUENE COMERS KTOTALN	126.00	#A	183.00	MA	ND	NF	MO	MA	.468.00	MA	45. 00	NF	30.00	*,
7.4-03044.0P0-BENZ0IC 4.15	12.00	RA .	NL)	MÁ	NC	, NFI	MG	NA	M(·	NA	NO	Nft	M(:	n÷
OI SENZCEHI OPHENE	MD	MA	23.00	NA	МĎ	NA	NC.	NA	MD	NA	NÜ	N F	MĐ	Ka
CHETHYL NAPTHALENE Gamed	MD	MA	130.00	MA	ND	NA	ND	NA	MO	MA	ND	MF1	M(NE
S METHYL. PHENANTHPENE SOMER	NO		23.00	MA	NO	i NE	MD	NA	NG	MA	NO	N6	N:	P _i
. 1-ETHEMVLIDENE-813 H-CHLOFOO BENZENS	NO	MA .	MC	MA	NO	NA	N D	· NEA	Mű	MA	NÜ	₩-	30,66	N=
POPO(AFRON	MD	MA ·	120.00	MA	NO	N A	#D	MA	NO .	NA	ND	MA	10.00	нс М
614 _ 8145444545646 756	NE	MA .	120.00	MA	NO	NA	NO	MA	MO	MA	NÜ	N r.	#C	ŊĖ
	NO	#A	NC:	 NA	ND	WA	ND	NA	NC:	MA	 ND	Mf-	12.1	·

TABLE 13

NUODEX, INC. - FORDS, MEN JERSEY SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS AREA "K"

SAMPLE APER							K							
SAMPLE POINT	K1-	2	; кз-		KS-		: K7-	8	; K9		; K	10	:	K11
SAMPLE DEPTH	0"-6"	18*-24	·: 0"-6"	: 18"-24"	: 0"-6" ;	18 "-24"	: 0"-6" :	18"-24	: 0*-6* ;	18"-24	": 0"-6"	: 18"-24	"; Ç"-t	111 -1-
PAPAMETER:	: : :	· 表面 表示 策 专 5		****	*****	K I KK I EF	r ers i rafi	*****				*******	,,,,,,,,,	•••••
LIRPADY SEAPTH OPGANICT (BASE NEU- TRACYACID EXTRACTABLE T EPACTIONS):			•											
LEIDHER-1 ESJER BrussHoel, Holf Approbancesmannesses	12,00	NA	ND	NA .	MD	NA	NE:	Йе	MD:	NA .	NO	NF	*1	V .
SATURATED ALGERHITE! HYDROCHESON	NG.	NA	MD	MA	NO	NA	MD	NP.	ME	NA	6.00	NE-	*	\ -
TRIMETHYL NARTHALENE ISOMER	MEI	NA	80.00	NA	NE)	N ⁶	MD	MA	- NE	ĦĤ	NO	Nŕ	*:	
1.T.T-TEIMETHOL BIEM.LOED.L.12MEFFAME	NO	NA	NC	MA	MD	NA	MD	MA	MC:	NA	NG	NF-	: .	٧
UMBATURATED HYDROCHER IN	ME:	NA	MD	NA	24.00	Mo	5.00	NA	NC:	MA	NÜ	Nin	٠.	• •
(min)whit (10th)	1230.00	NA	170.00	MA	200.00	MR	3.00	NA.	290. 00	NA	120.00	NF.		•

- 1. ONLY PAPAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
- 1. ALL CONCENTRATIONS IN PARTS PER MILLION UMLESS OTHERWISE INDICATED. 3. "NAT SIGNIFIES NOT AMALYZED.
- 4. THE SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS MARY, SEE AMALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

SAMPLE POINT	LI	.9	: 13-	4	; L5	-6	: L7-8 :	19-10	L11-12	:L13-14	11.15-16	117-12	1.19-20
			": 0"-6" ;										
AMPLE DEPTH Geris was ers ers seekken	: "0"-6" Karakarapi	DHXXXXX 1854	**********	NANKAN 1854	PHHHHHHH L	100 HXXXX	. 06- ;	F# MMA 4> 4 ±	######## 1054	*********	*********	12 -F4	
PARMETERS Parmerakan dan anananan	} (3												
elorate organics:													
COLUMENE	NA	ND	NA	0.08	MA	1300.00) NA	NA	ND	NA ·	MA	MA	4A
FINELTY POLLUTENT FOR NEUTPOLS:	ND	MA	14-30	MA	293.00	10 0	NA	NA.	NA.	NA	NA	NA.	48
ige growth a transcript of the second													
HUBURNIC COMPOUNDS:					-								
(# 19MITS)	5.00	NA 	400	**A	3.80	NA 	NA 	NA	NA 	A4	NA 	NH 	49
VANI.DE	NÒ	NA	NC:	4A	1.10	MA.	NA	NA.	NA	NA	NA	Nf1	4H
HEMI <u>H</u> 2	5.00	NA	5-00	NA	25.00	MA	NA	MA	MA.	NA.	MA	4A	44
HALITAONA	MO	NA	MD	MA	ND	MA	NA	MA	MA	MA	NA	MA	44
PPSEMIC	16.00	NA	11-00	NA	21.00	NA	NA	NB	NA	ĦĤ	MA	NA.	449
REPYLLIUM	, MD	NA	NO.	MA	NO	MA.	MA	NA	NA	MA	NA	NA	NA
P0m) UM .	1.60	NA	9.20	NA	2.90	MA	MA	MA	MA	MA	NA	NA	NA
HPIMILIM	30.00	MA	26.00	NA	36.00	MA	NA	MA	NA	MA	NA :	NP	44
	180.00	ŀ₩	107.00	NA	124.00	MA .	MA	MA.	NA	NA.	MA	NA.	MH
.£40	420.00	NA	1650.00	MA	507.00	MA	NA	MA	MR.	MA	NA	NA	V Ĥ
€e(∪ev	11.00	NA	15.00	NA	4.20	NA	NA.	MA	N/A	NA	NA	MA	48
CICKEL	.56 .00	MA	21.00	NA	63.00	labi	MA	MA	MH	NA	M	NA	MA
ELENIUM	ND	HA	NO	MA	MD	MA	TAR.	MA	NA.	NA	149	NR	NA '
FILMER	21.00	PH	5.00	MA	5.60	19A	NA	MĀ	NA	MA	149	NA	Ν'n
HALLIUM	MD	NA	Ю	MA	MD	HD	· NA	MA	NA.	MA	ļ#A	NA.	NA
I NC	360.00	149	87.00	, NA	304.00	MA	MA	. 169	MR	MA	NA	NA	NA
CB'S:													
PC8-1248	MA	140	NA "	NA	MA	100	16000.00	17000.00	MA.	MA	NA	NA	NA.

NUMBER, INC. - FORDS, MEN JERSEY. TABLE 14 SUPPLIES OF SOIL SAMPLE AMALYTICAL RESULTS AREA "L" FOR HATE HAR HER HERHER HOUGHHAR HER HAR HAHHER DOCKED HER HOUGH HE HOUGH HE HAR HER HAN LOGGEN HAR HER HER HER HER THE FOR TH : L7-8 : L9-10 :L11-12 :L13-14 :L15-16 :L17-18 :L17-10 : 13-4 15-6 L 1-2 SAMPLE POINT : 0"-6" (18"-24") 0"-6" (18"-24") 0"-6" (18"-24") 0"-6" (0"-6" (18"-24") 0"-6" (18"-24") (18"-24") (18"-24") SAMPLE DEPTH NAMES OF PERSONS ASSESSED AND POST OF PERSONS ASSESSED. HEDITIONAL REQUESTED PAPARETERS: 用甲氧甲基 医克莱斯氏 医甲基磺胺甲基 被弃损 230.00 43.00 NA MA MA CHLORO-FOLUENE (TOTAL) 4700.00 MA MA STROPIENE NA NA NA NA NA NA. NA. NA NA MA NR LIBPARY SEARCH OFFANTOS (BASE NEUTERL FRACTION); OTOHIORO, CHIOFORETHYL DENSEINE LECTIONS (TOTAL) 26.60 NO. MΑ MA MA NA 58.00 240.00 CEL BOYCHT DEUBENSERS TEORGRS (TOTAL) NA NR 2.4.5-TRECHLORO 5.00 5.00 , NO RA PENZALDENYDE NA NA MH MЯ DICEMBROREMEDIC 75.00 ND ACTO ISOMER NA 2-BUTOXY-PHOSPHATE 9.70 (3) THANOL MA NA Ħ٨ 10.00 MO MA MA MA 5.5-DIRETHYL 2(5h)-STORLORD, CHECRGRETHYE NA BEMZENE ISOMER PENTACHLOPORENZENE ND 5.00 ND MA MA NA ĦŘ NA RΑ NA ΝÀ 2.3,6-FRICHLOROBEN-110.00 NO. me mA. MA MA NA NA ND: NA ZEME ACETIC ACID TOTAL) DIMETHYL BENZENE NO. NO. 200.00 m NR. MA MA MA NA 130MER TRICHLOROBENZENE ISOMER ND 10.00 Ю M 100 MA NR NA MA ĦA 2,3,6-TRICHLORO-NO. 600.00 MA MA NR MA MA BENZOIC MOID CTOTAL HYDROCAPBONS (TOTAL) NO 580,00 MA m m NA NA KA MA ma INKNOWNS (TOTAL) 301.00 332.00 3660.00 m ΧA NA M MA KA

P

^{1.} MALY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN PROVE.

^{2.} ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;NR" SIGNIFIES NOT ANALYZED.

^{4. &}quot;40" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE AMALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

NUODEX, INC. - FORDS, MEN JERSEY TRBLE 15 SUMMAPY OF SOIL SAMPLE AMALYTICAL RESULTS AREA "11" NAMA ANIMA RANA NAMININA NAMA NAMA NAMANINA NAMANININA NAMANDON NAMANDA NAMANDA NAMANDA NAMANDA NAMANDA NAMANDA SAMPLE AREA 113,4,5 ; 15 M1-2 SAMPLE POINT : 0"-6" :18"-24": 18"-24": MIPE : 0"-6" :18"-24": SAMPLE DEPTH 法条件 计式 技术大学 医水液溶解剂 医乳球 医头耳 水果剂 化环氯乙烷烷 武策的 非非常的现在 医抗脓性的 医水杨 医水杨 医水杨 医水杨 医抗性坏死 机环烷甲炔 化甲汞苯 : PRPAMETERS MMH MERRYA PRESENTANT MERRYA PRIORITY POLLUTANT VOLATILE ORGANICS: ******** METHYLENE CHLOPIDE 0.19 0.30 POP 15: ***** (1.00 (2.00 NA INDPGANTO COMPOUNDS: *********** pH CUNITSD 5.60 5.00 WA 1. ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOUN ABOVE. 2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

4. THO T SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE AWALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT .

(* SIGNIFIES MICROGRAMS/SQUARE INCH)

3. "NA" SIGNIFIES NOT ANALYZED.

PEX

NUMBER, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE AMPLYTICAL RESULTS AREA "O"

CAMPLE AREA	! ! —————				0		-		
SAMPLE POINT	03	: 05-6	: 08-9	: 010-12	: 013-15	016-18	019-21	022-24	025-26
SAINTE CENTA	30"-36"	: 30"-36"	130"-36"	; 30"-36"	: 6"-12"	: 24"-36"	124"-36"	24"-30"	16"-24"
часакан аққадардардардарда РРР (MMETERS 49.44 ж.49 р. (РРЖЖЖЖЖЖЖЖЖЖЖ	N - -		18 A.R.P. N.R. R.P.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	iere zeme	n Charles	**************************************		
FRINKITY POLLUTANE , UNLATILE ORGANICS:		,			,				
eeuzene Apaarapahkabbudh	MD	MĐ	ND	MO	NO	MD	NO	0.05	MD
FOLHENE	NO	0.12	NO	ND	ND	NØ	ND	0.04	MC
reineity pollutant									
FEMSON POLITIONEMENTHEME	· ND	NO.	MĐ.	NO	, ND	1.70	MÚ	ND.	ND
VENZO KAFLUORENTHENE	70	MC:	MD	MC	MD	1.60	, MŪ	MG	MO
CHECK SOMESHE	40	ND	NŪ	ИŪ	NG	2.00	NÇ	ИŪ	NÇ.
लाहा (,-इ) अस्तु भ्रह्यपुत्र प्रतिकृतिहरू	1.99	1.90	NÇ.	2.90	2.30	5.40	1.40	HD:	ងប៊
FORMUL PENZYL OVERWINDE	10	NC	NO	MO	t4C	4.30	NŪ	NC:	યદ
(remiene	HD	MD,	NO	NO	NĐ	1,41)	ND	йū	ΝĐ
FOR FRACHENE	MO	NO	NC:	NÜ	ND	10.00	1.20	NO	:40
IGENUS1, 3,3-ado EVRENE	MD	ND	NO	ND	ND	11.00	NC	NC:	90
FHSMHTMPENE	ND	NO	NO	NO	NO.	1.30	NO.	NO	MD
PYRENE	ND	MO	NO	NO	NO -	8.90	ND	MD	NO
]\nec\unio (qmequings; usbudo (qmequings; (790) QE	2.40	2,70	5.50	9,30	5.50	7.30	2.70	4.20	3.30
: : H : : : : : : : : : : : : : : : : :	4.60						7.00		
Segments	0.40			•••••	1.30				4.50 4.00
FOTAL PHOSPHATE					1200.00		800.00	100.00	470.00
APSENIC	110.00	91.00	100.00	63.00	42.00	47.00	36.00	77.00	170.00
SERVILLIUM	1.10			1.30		HD	NO NO	1.10	2.70
`ADM1.UM	1.50		2.00		1.80				4.20
WROMIUM	150.00		·	140.00		16.00			260.00
COPPER	300.00	430.00					200.00	220.00	470.00
.EAO	72.00	120.00	ಕ.೧೦						

continued

MUDDEX, INC. - FORDS, NEW JETSEY SUMMARY OF SOIL SAMPLE AMALYFICAL RESULTS REER "O"

SAMPLE AREA	I. AANAP WAKES	**************************************	(東京 山田 安文芸芸	X EEKAN X P.	0	NAK AZ GRA	******	***	
SAMPLE POINT	03 :	05-6	: 06-9	: 010-12	013-15	016-18	: 019-21	020-24	(125-2s)
SAMPLE DEFTH	; 30"-36" ;	30"-36"	130"-36"	30"-36"	6"-12"	2 4"- 36"	124"-35"	:24"-7"	
portugation Paramentus Roccustus	; ;	. *******		*******					
MEDITIEN INGERANIC COMPONICE:	0.16	0.27	0.67	0.55	0.55	0.65	0.63	0.63	N;
NICHEL	21.00	26.00	15.00	24.00	11.00	3.49	17.00	22.00	3(0.0)
SELEM UM	1.40	NC:	1.40	MC.	Nt:	1.20	1.70	N;	43(
STERES.	0.60	1.40	0.89	1.90	2.30	0.23	0.30	0125	0.30
fequily=	N(i	N[N.	NT.	1.20	NÇ.	NC:	145	N;
71 N	110.00	284.00	71.00	170 . 96	130 (v)	2m,16	1." .	1 5	.5
MAST 1159;			,						
En eldyna	0.77	NŢ	N(NL	N.	N:	NC.	N)	#"
[#0-1-1-	0.31	N(NE.	0.13	N!	N:	N;	N'.	K'
4,4 150	NI.	1.10	0.57	NÇ:	N',	N:	N.	NÇ.	N(
e, ref (Ni.	1.50	0.45	Ni 📏	, N.	N.	N,	ra**	r,
. N	(c. 15)	1.10	0.23	ML:	N.	N[NC.	N	N:

ONLY PREMIETERS DETECTED IN AT LEAST (THE SAMPLE ARE SHOWN HBUTE).
 A 1 CONCENTRATIONS IN PARTS FOR MILLION UNLESS OTHERWISE INDICATED.
 THE SOUNTFIES NOT ANALYZED.
 THE STONIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PRO 1661 IN ATTAINED.

NUCLEY, INC. - FORDS, MEN JERSEY SUPPRISEY OF SOIL SRIPLE PARLYTICAL RESULTS



P1-	 2	<u>_</u>					
		: 73-	4	; P5-	•	: P7-	8
				: 0"-6" ;			18"-24"
pn m un matu ny :	OCH A REEN	en err enemp	H MENNYH I	CHIN HOLD MIN-H MA	HORMAN MACHINE	er kan edakê	rankan R
							•
NA	0.24	MA	0.26	HA	31.00	NR	0.45
							-
40	**	1.80	-	-		wn.	198
							.NA
MD	MA	2.70	18 1	4.60	RA .	ND	MA
		•					
1.10	MA	0.92	18A	1.80	MA	0.57	NA
4.50	MA	4.40	MA	4,40	ĦA	4.90	· 196
2.50	MA	16.00	MA	3.50	MA	0.27	MA
240.00	MA	76.00	NA	180.00	NA	230.00	MA
18.00	NA	MO	RA	16.00	MA	ND	MA.
230 .69	NA	360.00	MA.	210.00	NP.	240.00	NA NA
370.00	MA	474.00	MA	247.00	ЩP	345.00	NA
330.00	NA	535.00	MA.	291.00	NP.	\$26.00	NA
£.80	NA.	5.70	MP	7.20	4p	7.69	NA NA
37.00	4A	54.00	MA	73.00	4P	75. 0	NA NA
1.29	Ne.	ND:		0.70			MP
							MP
152.50	:	250.00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	120134		160.00	NA
0.15	MA	0.29	MA	Ů.18	RA	0.29	Né
0.06	NA.	0.15	NA	0.10	NP	9, 10	NP .
0.14	 MA	0.30	NA	ND	 46	10	MA
		•		•			
MA	2.00	MA	0.24	NA	0.46	MA	0.10
ne	MO	#A	MC	#A	0.01	#R	MD
NA	0.07	NA	0.02	NA NA	•		NC NC
							·
	4						
		•					*
ME	, NA ·	1.10	MA	1.10	MA	MD.	NA
140 66		191 00	N4	217 M	<u> </u>	102.00	MO
					•		MP.
	MA MD MD MD MD 1.10 4.50 2.60 240.00 18.00 250.00 6.80 27.00 1.20 23.00 1.20 23.00 1.20 23.00 4.80 0.14 MA MA	MA 0.24 MD MA MD MA MD MA 1.10 MA 4.50 MA 2.60 MA 240.00 MA 18.00 MA 250.00 MA 570.00 MA 6.80 MA 57.00 MA 1.20 MA 1.21 MA 0.15 MA 0.14 MA 0.14 MA MA 0.14 MA	NA	NA 0.24 NA 0.25 ND NA 1.80 NA ND NA 1.80 NA ND NA 2.70 NA 1.10 NA 2.70 NA 1.10 NA 0.92 NA 4.50 NA 4.40 NA 2.60 NA 16.00 NA 18.00 NA NO NA 220.02 NA 360.00 NA 370.00 NA 360.00 NA 370.00 NA 57.00 NA 370.00 NA 54.00 NA 1.20 NA 38.00 NA 122.00 NA 280.06 NA 0.15 NA 0.29 NA 0.14 NA 0.30 NA 0.14 NA 0.30 NA 0.14 NA 0.02 NA 0.14 NA 0.02	NR 0.24 NA 0.26 NA ND NA 1.80 NA ND ND NA 1.80 NA ND ND NA 1.80 NA ND 1.10 NA 2.70 NA 1.80 4.50 NA 1.60 NA 4.60 2.60 NA 16.00 NA 3.50 240.00 NA 76.00 NA 180.00 18.00 NA 76.00 NA 160.00 18.00 NA 76.00 NA 160.00 230.00 NA 210.00 NA 210.00 370.00 NA 3570.00 NA 291.00 4.80 NA 54.00 NA 7.20 37.00 NA 38.00 NA 7.20 31.20 NA 38.00 NA NC 122.00 NA 280.00 NA 170.20 0	NA	NA



OPEN PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN HEAVEL.
 RUL COMMEMPRISHED IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.
 THAT SIGNIFIES NOT DETECTED: SINCE DEVECTION LIMITS MARY, SEE ANALYTICAL DATA SHEETS PROVIDES IN ATTRIMMENT.

TABLE 18

and the second

NUCDEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA "Q"

SAMPLE AREA				6	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	:
SAMPLE POINT	Q1-2 ;	Q3-4 :	9 5-6 :	R7-8	Q9-10	
SAMPLE DEPTH	0"-6" :	0"-6" ;	0"-6"	0"-6" ;	0"-6,"	
#	************	******	*****	4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	*## ** # # # # # # # # # # # # # # # #	SUGGESTED PLANT
INOPGANIC COMPOUNDS:						
PH CUNITS:	4.11	4.01	4.56	7.75	7.76	
ANT I HON-	6.90	8.50	15.00	29.00	14.00	
APSENI (40.00	48,00	150,00	5.70	6.50	2.00
BERYLLIUM	0.50	0.60	0.80	1.70	2.00	
(e(:F) ::F	0.40	0.60	1.19	2.40	1.80	3.00
Cmb-dust die	43.00	44,00	120.00	710.00	30.00	
CÚE EÉ P	170.00	170.00	370.00	500.00	520.06	150.00
LEAC	2 20.00	170.00	440.09	450.00	340.00	10.00
HER PURE	0.50	0.24	0.65	0.24	0.40	
NICKEL	17.00	16.00	41.00	93.00	64.00	3.00
SEL END UM	1.30	0.98	1.30	0.71	1.20	
SILVER	(0.70	1.20	1.50	2.10	1.40	
THALLIUM	(4.00	<4.00	<4.00	12.00	<4.00	
ZINC	69.00	78.00	280.00	960.00	560.00	300.00

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. 2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;NA" SIGNIFIES NOT ANALYZED.

^{4. &}quot;NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE AMALYTICAL RESULTS PROVIDED IN ATTACHMENT ...

TABLE 19

MUCDEX, INC. - FORDS, NEW JERSEY SUMMARY OF SOIL SAMFLE ANALYTICAL RESULTS AREA "Q"

SAMPLE APER					******		6		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	:
SARPLE POINT	91-2	;	Q3-4	:	QE -6	;	Q7-8	:	63-10	[*******
SAMPLE DEPTH	06-	1	0"-6"	;	0	;	0"-6"	:	0"-0"	;*************************************
HPA ANYMOSPHRHHHHAMAHAH BBB BBELEBE BBB ANYDDA HRHHHHHHAMAHAH	•	•••	*****	. 44		874	*******	•••	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(SUGGESTED PLANT) (TOLERANCE LEVELS)
INOPGANIC COMPOUNDS: MASSESSED CONTINUES: PHOTOGRAPHICS COMPOUNDS	4.11		4.01		4.56		7.75		7.76	
ANT TOK-	6,90		8.50		15.00		24.00		14.00	
APTENIC	40.00		€.00		150.00		5.70		6.60	2.00
BERYLLIGN	0.50		C.+C		0.?0		1.70		2.00	
CHOPS IM	0.40		0.60		1.19		2.40		1.90	3.00
CHR ON PUTT)	43,00		44.00		129.00		710.00		30.00	
COPPER	170.00		170.00	,	370.00	••	500.00		5 20.00	150 .01
LEAD	220.0 0		170.00		440.00		450.00		34 0.00	19,00
HEACURY	0.50		0.24		0.65		0.24		6.40	***
NICKEL	17.00		16.00		d: (%)		93.00		64.00	3.60
SELENIUM	1.30		0.46		1.30		0.71		1.20	
SILUER	<0.70		1.20		1.50		2.10		1.40	
THRECTURE	<4.00		<4.00		44. 99		12.00		<4.00	
ZINC	69.00		7 8. 00		2 80.00		860.00		560.00	300.00

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SMOWN ABOVE. 2. ALL CONCENTRATIONS IN PARTS PER MILLION UNLESS OTHERWISE INCICATES.

^{3. &}quot;NA" SIGNIFIES NOT ANALYZED.
4. "NO" SIGNIFIES NOT DEFECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL RESULTS PROVIDED IN ATTACHMENT .

NUODEX, INC. - FORDS, NEW JERSEY SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

GROUP II AMALYTICAL SCHEDULE

ETHOXYCHLOR INI CROGRAMS/LITER)	NO NO	MD	ND	. NO	NO	MD	MD	HO	MD	NO	ND:	ND	MD	MD ,	MD	MD	ND	МО	MD
00 I UM	19.00	50.00	48.00	110.00	170.00	330.00	82.00	130,00	65.00	120.00	71.00	23.00	120.00	14.00	90.00		2800.00	97.00	1200.00
MORMESE	1.80	1.30	11.00	0.67	0.83	2.20	0.03	0.31	MD	0.04	0.24	1.70	MD	0.11	1.60	0.18	0.17	0.46	0.39
INDAME	NÓ	ID	MD	MO	MD	MO	MD	NO	ND	ND	MO	NO	MD	MO	MD	MD	MD	100	ю
ELENTUM	ND	₩ .	Ю	Ю	MD	MD	MD	NO	MO	NO	NO	NO	HD	HO	ND	MD	MD	HD	MD
EAD	ND	0.009	0.05	0.007	0.008	0.009	0.73	NO	MD	М	Ю	NO	Ю	0.009	0.06	0.006	MD	110	10
ROM	33.00	4.00	40.00	51.00	11.00	66.00	***	149	0.51	0.52	7.80	40.00	3.50	4.70	39.00	16.00	0.71	15.00	4.00
ROSS BETA pci/liter>		. 11.00	8.80	18.00	32.00		140.00			160.00	8.70	29.00	16.00	3.10	34.00	9.50	45.00	87.00	78.00
ROSS ALPHA (pC1/L1TER)	6.30	2.00	HO	NO	HO .	NO	3.40	140	10.00	11.00	3.80	13.00	4.00	1.30	8.90	3.40	110	7.10	27.00
LOURIDE	0.39	0.19	0.62	1.20	1.30	1.20	0.45	0.67	0.37	0.48	0. 18	0.58	0.46	0.41	0.89	1.10	1.40	0.67	4.30
MORIN	ND	MD	10	Ю	HO	HD	ND	140	NO	NB	MD	NO	MO	MD	MD	MD	10	MD	MD
HL ORE DE	40.00	100.00	150.00	€0.00	220.00	600.00	110.00		90.00		130.00	28().00	240.00	25.00	440.00	160.00	1200.00	1300.00	1200.00
COLIFORM (COL/100 MILLILIVÉRS)	MD	10	MD	NO _.	MO	MD	2.00	MO	50.00	2.00	MO	NO	MD	MO	, MD	ND	23.00	>1600.0	240.00
PR I UN	0.07	10	0.06	0.02	0.03	0.06	MD	0.03	ND	0.03	0.03	0. 14	0.04	0.09	0.10	MD .	0.03	0.03	0.06
ewa wan man man man man NRSENI C	MD	II D	MO	NO	0.01	MO	MD	ND .	MD	NB	MD .	140	MO	ND .	0.01	MD	MD	MO	0.C
HRANETERS (GROUP) II);		IN REPRES	· 宋宗 宋元宗 宋代末				****			********	******	*****	HERM M M MM MINN	HHMMMM	HERMANN NEW	MHM WHM NK	MANN MEMBER	· MMMMMMMM	HERMAN SKI

TRBLE 20 continued

NUODEX, INC. - FORDS, NEW JERSEY

SUMMRRY OF GROUNDWATER MARLYTICAL RESULTS

GROUP 11 AMPLYTICAL SCHEDULE

MELL DESIGNATION :	B-3	B-4	1 B-75	1 B-70	: B-85	8-80	1 255	250	258S	1 2566	275	: 27D	285		1 305 1		, 315	3,20	1 335
PARAMETERS (GROUP II): ими мин мини ими ими ими AMMONI A-N		4.20	8.30	59.00	2.80	19.00	MD	NO	NO	0.56	22.00	110.00	2.80	0.56	17.00	19.00	12.00	; 9.50	
METRATE	0.35	1.90	0.53	0.65	0.25	0.66	0.03	0.46	0.15	MO	0.65	0.52	0.39	0.50	0.91	0.27	0.39	0.14	-}
pH (UNITS)	3.60	6.40	5.90	5.90	6.40	6.10	6.70	7.70	- 6.70	6.70	6.60	3.50	6.10	6.30	3.70	5.50	6.60	6.70	8.5
PHENOLS	0.01	0.02	0.78	1.10	MD	0.05	0.002	0003	0.55	0.48	0.01	0.18	0.01	0.02	13.00	1.10	0.01	0.22	0.0
SULFATE	140.00	10.00	300.00	100.00	1100.00	690.00	130.00			140.00		160.00	16.00	170.00	100.00	90.00			
TOTAL DISSOLVED SOLIDS	290.00	250,00	400.00	760.00	2000.00			630.00	510.00	1100.00	410.00	580.00	470.00	250.00	850.00	290.00	14000.0	2500.00	
TOTAL ORGANIC CARBON	3.70	20.00	39.00	64.00	7 .00		4.90	4.80	4.00				3.40				450.00		68.
TOTAL ORDANIC MALOGEN	2.40	1.10	7.10	19.00	0.20		0.09	0.27	0.11	0.56	0.23	8.80	0.03	0.06	16.00	9.20	4.80	5,60	1.
2,4 - D (HI CROOKANS/LITER)	10	ND	MD .	140	ND	MO	HD	140	ND	ŇD	MD	MD	MO	ND	MO	MD	ND .	140	
2,4,5 - TP (MI CROSSAMS/LITER)	HD	WD	10	NO	NO	MD	MD	140	NO	NO	MD	110	ND	NO	MO	MD	MD	HO	New 1
TOXAPHENE (MI CROGRAMS/LITER)	ND .	IID	HD	NO	ND	MD	ND	140	NO	MO	MD	140	NO	NO	MD	MO	MD	MO	NC
CONDUCTIVITY (UNHOS)	400.00	450.00	500.00			2300.00							:50.00						

^{1.} ALL CONCENTRATIONS IN MILLIGRAMS PER LITER UNLESS OTHERWISE INDICATED.

^{2. &}quot;NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN ATTACHMENT

^{3. &}quot;MA" SIGNIFIES NOT AMALYZED.

TROLE 20

NUOUEX, INC. - FORDS, NEW JERSEY SUMMREY OF GROUNDWITTER ANALYTICAL RESULTS GROUP 11 FMRLYTICAL SCHEDULE

	inn mararh	机阿用 医血性疾病的	机对邻 化阿斯林氏虫	HERMANAMEN	网络美俚物用 电线	*****	ARRES MARKEN	美麗斯 医水果 美色質	****	Anga-44aa	******		Rhabes Pring	***	RESERVE EN	-	MANNE MANNE	M WENNERS	******
	8-3												: 285 1						
nna naa haa haa haanaa haa Par ame Ters (Group) 18); Hua ama haa haa haa haa haa		MMM IEM MANAK	MARKANAMA	nan Herrinan	*******	ia keraki		***	Marrana	424 RRAAPA	PARE ARA	HAK HALLA	NA M M M M M M M M M M M M M M M M M M M			n maa kan ma	Manin Maria Maria	H 4 M M MANUM X :	A MANNET
ARSENEC	ND .	MD.	MD	MD	0.01	NO	· ND	. 01	NED	MD	MD	HD.	ND	MD	0.01	ND	W	MO	i.,
orr i un	0.07	10	0.06	0.02	0.03	0.06	MO	0.03	NO	0.03	0.03	0.14	U.04	0.09	0.10	МО	0.03	0.03	0.06
COLIFORM (COL/100 MILLILITERS)	MD	100	NO	NO	MD	MO	2.00	140	50.00	2.00	NO	140	MO	NO	MD	MD	23.00	>1600.0	240.60
CHL ORI DE	40.00	100.00	150.00	450.00	220.00	600.00	110.00	120.00	90.00	110.00	130.00	281.00	2:40.00	25.00	440.00	160.00	1200.00	1300.00	1200.00
ENDRIN	HĐ		HB.	ND	100	MD	MD	140	MO	ND	ND	ND	Ю	110	MD	MD	MD	MD.	MD
FLOURI DE	0.39	0.19	0.62	1.20	1.30	1.20	0.45	0.67	0.37	0.48	0.18	0.58	0.46	0.41	0.89	1.10	1.40	0.67	4.30
GROSS ALPHH (pci/LITER)	6.30	2.00	NB	ND	MD .	Ю	3.40	110	10.00	11.00	3.80	13.00	4,00	1.30	8.90	3.40	MD	7.90	27.00
GROSS BETH (pci/LITER)	22.00	. 11.00	8,80	19.00	32.00	26.00	∫1 40, 00	180.00	120.00	1.0.00	8.70	24.00	16.00	3. 10	34.00	9.50	45.00	87.00	78.00
IRON	33.00	4.00	40.00	51.00	11.00	66.00	M	146	0.51	0.52	7.60	40.00	1.50	4.70	39.00	16.00	0.71	15.00	4.
LEAD	10	0.009	0.05	0.007	0.008	0.009	0.73	140	NO	ND	ND	NO	Ю	0.009	0.06	0.006	NO	MO	
SEL ENT UM	Ю	IID	HD	NO	ND	MO	MD	140	NO	HD	NO	NO	NO	MD	MO	MD	HO	MO	MD
LINDAME	MD	•	10	NO	MO	MO	ND	NO	NO	, NO	ND	10	NO	MÚ	MD	MD	NO:	MO	MD
MANGAMESE	1.00	1.30	11.00	0.67	0.83	2.20	0.03	0.31	NO	0.04	0.24	1.70	NU	0.11	1.60	0.18	0.17	0.46	0. 59
500 I UM	19.00	50.00	48.00	110.00	170.00	330.00	02.00	130.00	65.00	120.00	/1.00	2 1.00	150-00	14.00	90.00	44.00	21900.00	97.00	1200.00
METHOXYCHLOR CNI CROGRAMS/LITER)	ND	10	NO	NO	MO	MO	MD	140	MD	MD	ND	140	MŪ	NÚ	MO	NU	MD	Nú	NU



TROLE 20 continued

NUMBER, INC. - FORDS, NEW JERSEY

SUMMARY OF GROUNDWATER HWALYTICAL RESULTS

GROUP II AMALYTICAL SCHEDULE

C was when her have the standard		MAN MEMITINE	医复数神术的 医长斑	MHNNAA FRA	ARE IRAAAA	***	***	***		****	*****	*******	***	MERSHER	HARRAKRAK	MIN ALM WITH REAL	MMM HHNKK	MARKE PARK	*****
ELL DESIGNATION 1							: ./55										315		
MA ADA MENDEN ME AMERIKA PRAMETERS (GROUP II) MENMA HARMAN MENDEN MENS MENOMEN-N	l .	6.2 0	8.3 0		2.80		MD	140	ND	().5c		110.00	2.80	0.56	17.00	19.00	12 .00	; ; 9.50	
IL FRATE	0.35	1.90	0.53	0.65	0.25	0.66	0.03	0.46	U. 15	MD	0.65	0.52	0.39	0.50	0.91	0.27	0.39	0.14	
H (UNITS)	3.60	6.40	5.90	5.90	6.40	6. 10	6.70	7.70	6.70	6.70	6.60	3.50	6.10	6, 30	3.70	5.50	6.60	6.70	8.5
MENOLS	0.01	0,02	0.78	1.10	ND	0.05	0.002	0003	0.55	0.48	0.01	0.18	0.01	0.02	. 13.00	1.10	0.01	0.22	0.6
SLAL FATE	140.00	18.00	300.00	100.00	1100.00	690.00	130.00	230.00	140.00	140.00	24.00	160.00	16.00	170.00	100.00	90.00	400.00	280.00	310.6
TOTAL DESSOLVED SOLEDS		250.00	400.00	760.00	2000.00	2000.00	1100.00	630.00	510.00	1100.00	410.00	580.00	470.00	250.00	850.00	290.00	14000.0	2500.00	3400.6
	3.70	21.00	39.00	64.00	7.00	26.00	4.90	4.80	4.00	8.70	17.00		3.40	2.00		26.00		150.00	68.1
TOTAL DRORMIC HALOGEN	2.4	1.10	7.10	19.00	0.20	6.00	0.09	0.27	U. 11	0.56	0.23	8.30	0.83	0.06	16.00	9.20	4.80	5.60	1.
?,4 - D (HI CROGRAMS/LITER)	100	10	ND	Ю	ND	NO	MB	140	ND	MD	MD	140	ND	MD	ND	MD	MD	110	10
2,4,5 - IP (MI CROURANS/LITER)	MD	D	Ю	ND	MD	MO	MD .	140	MD	MU	ю	140	NU	MD	ND	MD	MLi	MD	· · · · · · · · · · · · · · · · · · ·
OXAPHEME MI CROGRAMS/LITER)	NO	, IID	ND	NO	NU	MO	MD	140	MD	NÚ	MD	140	MU,	MD	MD	MD	MD	110	NU
ONDUCTIVITY (UNHOS)	400,00	454.00	500.00	1000.00	2200.00	2300.00	600.00	750.00	6181.110	91111,1111	500.00	725,00	550.00	230,00	1000.00	380.00	15000.00	3000.00	3990.0

^{1.} ALL CONCENTRATIONS IN MILLIGRAMS PER LITER UNLESS OTHERWISE INDECHIED.



^{2. &}quot;NO" SIGNIFIES NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE HNALVIICHL DATA SHEETS PROVIDED IN HITHCHMENT .

^{3. &}quot;MA" SIGNIFIES NOT AMALYZED.

حديث فالملك

THBLS 21 MUODEX, INC. - FORDS, NEW JERSEY SUMMERY OF PROCESOMETER AMPLYTICAL RESULTS GROUP III AMALYTICAL SCHEDULE HERENGE SERVICES SERVICES OF S HELL DESIGNATION : 8-3 | 8-4 | 8-60 | 8-75 | 8-75 | 8-70 | 8-75 | 8-80 | 174 | 178 | 210 | 224 | 228 | 255 | 250 | 258 | 2580 | 26 | 275 | 270 | 285 | 260 | 705 | 700 | 715 | 725 | RROBBERENEWES CERTAIN DESCRIPTION OF STREET OF PERPHETERS (GEOUP 1115): ******************** PRICRITY POLLUTANT VOLATILE OFGAMICE: Mark discharge washing dag. BENZEHE 2:0.00 11.00 400.00 179.00 173.30 140.00 33.00 27.00 14.00 72.00 7.00 220.00 6.00 CHREON FETRACHLORIDE МΩ ΜD ĦĐ 229.00 71.00 ND tan ΝĐ NO NO. 85 ND NB ND 240 NO ND CHA PROSENCEME 17.00 670.00 30 120.00 24.00 ND 16.00 . 22.00 1:0 17.90 290.00 Ю no 620.00 619.00 140 . 240.00 CHLOROFORM 4000.00 02.0001 30 8.00 30 ND ND ND KD OM 5.00 MD 27.00 23.00 ND 29.00 610.00 NO ND ĦĎ ND 1,2 DICHLOEOPROPYLEME MO 也 140 ИĎ ND ΚD ĦΩ MD MI 9.00 TO: HD 160.00 MD œ ND ND ND MD ETHYLSENZENE 6.00 ND ND 7.00 ND 5.00 MD 7.00 ЯĐ ND MD ND 5.00 140 METHYLENE CHLORIDE ND ND MD 9.00 ND MD 140 MD MD TETERCHLOROETHYLENE 13.00 MO M ND MD MD MD MD DH) ΝĐ 200.00 16.00 1700.00 NO HD 370.00 ND TOUVENE 24.00 19000.00 15000.00 670.09 40.00 11.00 ND 13009.00 720.00 24.00 TRANS 1.2-9.00 МD PT: CHLORCE THYLENE PRIORITY POLLUTANT ACID EXTRACTABLES: **Пейронуражнай объекто** 4-CHLORO-3-METHYLPHENOL MO 110 NO 45.00 ND ND ND 2.4-DIMETHYLPHENOL ĦĐ 2500.00 75.00 PHENCL ΝĐ ND ND

Sales Cons

TRELE 21 NUODEX, INC. - FORDS, NEW JERSEY continued SUMMERY OF GROUNDWRITER AMPLYTICAL RESULTS GROUP III RMRLYTICAL SCHERULE WELL DESIGNATION 1 8-3 | 6-4 | 6-65 | 6-60 | 6-75 | 6-70 | 6-85 | 6-60 | 178 | 178 | 210 | 228 | 228 | 255 | 256 | 2560 | 26 | 275 | 270 | 285 | 250 | 305 | 300 | 315 | 320 | 335 | HARP MERICAN MENDER AND A STATE OF THE PART OF THE PAR PARRMETERS (GROUP III): RHAMMWHANN WHEN WANNERS PRIORITY POLLUTANT BASE MENTRALS: PISCE-ETHYLHEXPL) PHTHALATE 1,2-DICHLOROGENZENE 100 Ю ΚĐ CM NO 1, 3-DI CHILOROBENZEHE ND ND 100 ND MD ĦΩ KA HA N8 MD ΚĐ М m M MD Ю Ю ND M Ю ND NO KD МĐ KD 1, 4-DI CHIL OF OBENZENE ND 40.00 10 ND 110 KD 150PHORONE 190.80 ю ďΩ KD KD ND MD MD. NB ND MA ĦD 100 ŧŒ MD KO Ю КĐ ND PRIORITY POLLUT RAT HETPLS: PPERSONNERSENSE ЖD PHILIMONY (PPM) ND KD RITSENIC (PPII) 0.20 0.02 0.04 C.01 ND HD 0.09 0.01 0.04 0.09 0.10 ØN 0.03 0.03 0.06 BARIUM (PPM) 0.07 KD 0.03 0.02 0.04 0.02 0.03 0.06 MA ΚĐ MD ND MD 0.03 ND 0.03 NA C.03 0.14 0.04 KD CROMIUM (PPM) 0.02 KD ND ю KO CD1 ND КĎ MD W ND ΚD COPPER (PPID) NO. eto NĐ MD MO 0.03 ΙĐ Ю ND ND. MD ΝĐ ND MD Rt D M ŧΩ RCD: NO MD. MEDI 0.009 0.06 0.006 LEAD (PPH) 0.009 ĦD ND 0.05 0.007 0.008 0.009 MD ĦD MD 0.73 Ю ND ND KD 0.39 MANGANESE (PPM) 1.30 1.70 0.09 11.00 0.67 0.63 0.11 0.28 0.03 0.31 0.04 C.24 1.70 NO. 0.11 1.60 0.18 0.17 0.46 1.80 2.20 0.16 MICHEL (PPR) 100 ю 裀 ю Ю 0.08 Ю Ю 0.07 Φſ 0.16 0.02 RD C.03 ĦD ИD 0.04 KD) HA. MA ND 色 0.01 SELENIUM (FPH) ĦĐ NO. ю 100 KB 100 ZINC (FFH) 0.03 0.02 2.30 C.04 0.63 0.03 0.33 0.06 0.03 G.02 0.14 MA NR MD 0.08 :.40 0.02 0.64 0.05 0.07

The state of the s

3

SUMPLEY OF GROUNDENTER ANALYTICAL RESULTS continued. GROUP III RESELVTICAL SCHEDULE HEAD REPORTED THE REPORT OF THE PROPERTY AND ADDRESS OF TH : £-3 : £-4 : £-65 : £-60 : £-75 : £-70 : £-85 : £-80 : 178 : 210 : 220 : 228 : 255 : 250 : 250 : 250 : 26 : 275 : 270 : 265 : 280 : 305 : 300 : 315 : 320 : 335 : HARRING HARRING BARRING ARAMETERS (GROUP III): 医乳球 医乳球球球 医乳头性蛋白蛋白 医甲状腺 ADDITIONAL REPUESTED PARAMETERS: **ЧИНИНЯРИЯ РАЧАККАМА»** я CHLOROTOLUENE 740.CO 410.00 XY'L EHE 478.00 FORMALDERYCE 20.00 610.00 950.00 1500.00 190.00 70.00 CYAHEDE MATEIC WARADEIDE Ю ЖĐ HD MD TRAMS 1.3* DICHLOROPROPYLERS BHT PUTYLBENZENE HETHYLETHYL KETONE 110 LIBRARY SERP.CH OF GRATICS CUOLATILE OF GRIEC FRACTION: ---

72.00 570.00 14470.00 7290.00

190.00 2700.00 760.00

17.00

KĐ

7.00

ю

120.00

湯等湯

1600

630,00

MQ.

NO

MA

939.00

ĦĐ

110,00 1100.00

5.00

K8

34.00

130.00

NB

ND)

KD

390.00 340000.00

110.00 340.00

ND

ND

HD

ĦĐ

CH

Ф1

Ħ

ИĐ

1000.00

КЭ

9.00 210.00 1300.00

NB

13.00 1569.00

310.00

130.00

NA

MA

ИĐ

ND

20.00

560.00 260.00

MA

ŧø

N/D

KD

KA H/A

HD

ND

ĦĐ

9880.00

Ħ£

MD

20.00

KD

Ю

MD

ΗĐ

5600

440.0Q

30.00

11D

to.

ĸ

ND

ĦĐ

120.00

MD

510.00 320.00

ĦĐ

MD

MO

MD

36.00

240.00

ND

BUCGEY, INC. - FORGS, NEW JERSEY

CHLOROTOLUENE

DI-RID TRI-

CHLOROTOLUENE XYLENE

BENZALDEN!DE

RCETONE

TABLE 21

TRBLE 21 continued

NUCCEX, INC. - FORDS, MEN JERSEY SUMMARY OF GROUNDWATER RHALYTICAL RESULTS

GROUP III AMALYTICAL SCHEDULE

1 8-5 ! 8-4 ! 8-65 ! 8-60 ! 8-75 ! 8-70 ! 8-85 ! 8-80 ! 17A : 17B ! 21D ! 22A ! 22B ! 255 ! 250 ! 256 ! 275 ! 27D : 285 : 285 : 280 ! 305 ! 300 ! 315 ! 320 ! 335 ! HELL DESIGNATION THE RESIDENCE AND ADDRESS OF THE PROPERTY OF T

PREAMETERS (GROUP III): MANAMAMANAMANAMANAMANAMA

LIBRARY SEARCH ORGANICS (VOLATILE OPGANIC FRACTION:

NEWSCHARMSHARMSHARM		_				A		_						200		* C	***	***	*0	40	40	٧n	40	HD	30	нD	MD
TRIFLUORO- CHLUROTULUENE	MD		7D	200.00					3H	.un	229.09	AU															
1,:-047- -814986435HE	MD.	ND	HD	ЖĎ	ND.	MD	ND.	HD	38	XA .	MD	150.09	:10	ND .	МВ	MC	ND	110	. 10	MD	110	#D	70	NC			
DT CHLOPCBENZENE HETHANOL	NU	HD.	ĦD	AU.	2700.00	7:0.00	HO	NO	BA .	MA	MD	65.00	ND	MD	XD	140	MD	KD	ЖD	MD	MD	KĐ	1100.00	ND	MD 	MD	ND
DICHLORGEENZOIC ACID	MD	MD	ND	HD	ħD	ĦĐ	ИD	MD	MA	NA .	ND	MD	MD	Ю	10	140	MD	MD	,MD	ND	MD	KD	MD	IIO	ΝÓ	50.00	MD
MLSYLOXYPHENCL	ND	MD	ND	ND	HD	MD	NO	391.00	MA	MA	NO	ND	MD	MD	MO	SHD	CH	MD	115	ND	ND	. NO	7-0.00	ND	ND .	M 0	ND.
CYCLOALKYL METHA, MEPTA, AND HEXAMONES	MD	ND	HD	50.00	MD	MD	32.00	MD	KA	MA	MD	KD	ND	, KD	MS	N9	NO	KQ	KO	ND	ND	ND	KĐ	МО	MD	170.00	HD
LIBRARY SEARCH ODGANICS CRASS NEU- TRAL/ACID EXTRACTABLE FRACTIONS): SEMANDAGAGASTERNAMENTA BENZOIC ACID	ю	20.00	ĦD	HD	NO	160.00	жо		NO.	na.	NO	" ND	HD	ю	# 0	149	НÐ	HD	но		ND	MD	NO.	ОМ	₩D	ю	МО
2-BUTHOXYETHANOL PHOSFHATE	MD	MD	MD	#D	ND .	ND	ND	ND	MA	38	ND	42.00	MD	ŅO	MD	19	149	ЖD	ND	ND	140	KD	Ю	Ю	NO	MD	MD
BENZENE METHANOL	140	50.00	ND	no	720.00	MO	MD	MD.	NA .	ЖA	ND	HD	NO	KD	10	CH1	Ю	ж	KD	20100.00	МĐ	#D	320.60	140.00	RD.	KD	16B
METHYLPHENOL ESTERS	MD	#D	MD	MD	KD .	MD	KD	NO	KA.	MA	MD	MD	ND	NO.	10	tio.	trD	KD	Ю	3300.00	MD	#D	210.00	ND .	ND	MO	NO.
PTHIPLATE ESTERS	MO	ND	720.98	110	ND	no	ND	ND.	MA	20	MD	MD	MD	ND	MD.	ND	Ю	ND	ND.	NO	MD.	ND	KD	ND	du	ND,	NO
1,1 0XY-015>EUFAHE	MD	MD	MD	129.09	NO	MD	HD	KD	KA	R)A	50	MD	MD	PED .	MD	KD	KD	KO.	AD.	IID	MD	MD	ND	ND	НD	#D	KO
CHLOGOPPENYL PROPAGENE	₩D	ND	ND	12.00	MD	HD	#D -	KD	NO.	38	MD	ND .	MD	MD	MD	NO	KD	Ю	MD	KD	KD	MD	- 04	ND	МĎ	MD	NO.
METHYLEME (BIS) BENZENE	MD	21.00	MD	139.00	NO	ND	MD	ND	KA	NA.	MD	MD	MB	ND	10	KD	NO.	NO	KD	KD	ND	MO	MD	ND	MD	KD	MD.
CHLOFODIMETHYL BEHZFMIGE	HO	MD	MO	24.00	ND	MD	MD	MD	NA .	ĦĤ	MD	ND	MD	ND	ND .	140	IO	MD.	KD.	ND	MD	K D	MD	ND	110	ND	MD
METHYL DI PHEKYL	MO	MD	MD	60.00	MD	MD	MD	*D	NA	RA	ND	MD	MD	MD .	· 100	ND	MD.	ю	RD.	ID	ND	ND.	KD	110	ND.	MD	ЖD
PROPERCIC ACID		230.00	MD	110.00	460.00		420.00		BA .	MA	MO	140.00	1.0.00	150,00	150.00	160.00	33.00		1-10.00	ND	ND	130.00	KD	ND	10.00	KD	110.00

^{1.} ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

^{2.} ALL CONCENTRATIONS IN PARTS PER BILLION UNLESS OTHERWISE INDICATED.

^{3. &}quot;PPH" SIGNIFIES PARTS PER HILLION.

reciいうさ 11 JUN 1985

NUODEX INC . FORDS, NEW JERSEY

GENERAL INFORMATION & SITE EVALUATION SUBMISSIONS FOR THE ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APRIL 25, 1985

VOLUME 2 SURFACE WATER DISCHARGE



165 Fieldcrest Ave. • CN 7809 • Edison, New Jersey 08818-7809 • (201) 225-2000

()

ATTACHMENT E: HISTORIC ANALYTICAL RESULTS

SURFACE WATER DISCHARGE	Volume 2
GROUNDWATER QUALITY	Volume 3
LANDFILL/SLUDGE LAGOON	Volume 4
OFFSITE CONTAMINATION	Volume 4

An extensive amount of analytical data has been supplied that describes the quality of the surface water, groundwater, and landfill/sludge lagoon areas. The information has been attached in additional volumes, grouped by category, for review.

ATTACHMENT E: HISTORIC ANALYTICAL RESULTS

. SURFACE WATER DISCHARGE

VOLUME 2



Drakery & Surper Wales

RECEIVED

MAR 0.8 1985

State of New Jersen

M. Q. CEPR!NI

DEPARTMENT OF ENVIRONMENTAL PROTECTION **DIVISION OF WATER RESOURCES**

CN 029

JOHN W. GASTON JR., P.E. DIRECTOR

TRENTON, NEW JERSEY 08625

DIRK C. HOFMAN, P.E. DEPUTY DIRECTOR

John J. Mahon, Plant Manager Nuodex Inc. Industrial Ave. Fords, N.J. 08863

March 7, 1985

NJPDES Permit No. NJ0000116 Effective Date: May 1, 1985

Dear Mr. Mahon:

Enclosed is the Final NJPDES/DSW Permit and Notice of Authorization to discharge pollutants to Black Ditch and Slingtail Brook, issued in accordance with the New Jersey Pollutant Discharge Elimination System Regulations, N.J.A.C. 7:14A-1 et seq. Violation of any condition of this permit may subject you to significant penalties.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6, you may submit a request to the Administrator for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J.A.C. 7:14A-8.9 through 8.13. The request should be made to:

> Administrator Water Quality Management Element Division of Water Resources CN-029 Trenton, New Jersey 08625

Applications for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

If you have any questions on this action, please contact Mr. Edward Post, P.E., Chief, Industrial Permits Section at (609) 292-0407.

Sincerely,

constri

Paul C. Kurisko, P.E., Chief Bureau of Industrial Waste Management Water Quality Management

New Jersey Is An Equal Opportunity Employer



State of New Mersen

DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

CN 029 TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.E. DIRECTOR DIRKIC, HOFMAN P.E. DEPUTY DIRECTOR

FEB 2 5 1985

Mario Q. Ceprini, Ph.D.
Manager, Environmental Affairs
Nuodex, Inc.
Turner Place
P.O. Box 365
Piscataway, New Jersey 08854

SUBJECT:

Finalization of Draft NJPDES/DSW Permit

No. NJ0000116 to Nuodex, Inc.

Dear Dr. Ceprini:

This letter is in response to your comment letter, dated October 4, 1984 concerning the draft NJPDES/DSW permit for Nuodex's Fords facility. Based on your comments and subsequent letter, dated January 22, 1985, certain changes will be made to the draft permit.

In your January 22, 1985 letter you state that all production at the Fords facility will cease by January 31, 1985. In addition, all material inventories will be used up and all storage tanks and processing equipment cleaned by the end of March 1985. For this reason, the limitations and conditions for Outfalls 001 and 002 will be changed to reflect the Department's standard requirements for stormwater discharges with the addition of Bioassay testing and monitoring for Volatile Organics. The limits for outfalls 001 and 002 will be on a gross basis as follows:

Parameter	Avg. Limit	Max. Limit Mon	nitor Frequency
Flow	N/A	N/A	N/A
Chemical Oxygen Demand Total Suspended Solids	N/A N/A	100 mg/1 50 mg/1	Monthly Monthly
PH (001)		5.0-9.0 S.U.	Monthly
pH (002) Oil and Grease	N/A 10 mg/1	6.0-9.0 S.U. 15 mg/l	Monthly Monthly
Toxicity (Bioassay)		ble Acute Toxicity	
Volatile Organic Priority Pollutants (GC/MS)	N/A	N/A	Quarterly

Biomonitoring and Volatile Organics monitoring are necessary due to recent data that indicates the presence of volatile organics in the groundwater and surface runoff from the facility.

Because of the cessation of production and the emptying of storage tanks, the BMP Plan requirements will be deleted from the permit. If any production is begun again or if any of the storage facilities are used, Nuodex must inform the Department so that it may be determined if any permit modifications are necessary.

The length of the final permit will be changed from the two years currently in the draft permit. The expiration date of the final permit will coincide with the expiration date of Nuodex's NJPDES/Discharge to Groundwater (DGW) permit. This date is July 14, 1989. The reporting frequency will be changed from monthly to quarterly as requested. Requirements of the Interstate Sanitation Commission will be retained, but there will be no monitoring associated with these requirements.

The draft permit will be finalized to reflect the changes discussed above. If you have any questions you may contact me or Flavian Stellerine of my staff at (609) 292-0407.

Sincerely,

Edward H. Post, P.E., Chief Industrial Permits Section

Bureau of Industrial Waste Management

WQM98:mer

John Mahon, Plant Manager, Nuodex Inc. cc: Industrial Ave., Fords, NJ 08863 George Meyer, Region II EPA A. Mytelka, Interstate Sanitation Commission Final Permit Distribution List

Files



STATE OF NEW JERSEY

NOTICE OF AUTHORIZATION



RMIT NO.

ISSUANCE DATE

EFFECTIVE DATE

EXPIRATION DATE

NJ0000116

March 7, 1985

May 1, 1985

July 14, 1989

UED TO

Nuodex, Inc. Turner Place .O. Box 365 FOR ACTIVITY/FACILITY AT Industrial Avenue Fords, NJ 08863 OWNER

Same as applicant

_iscataway, NJ 08854

UING DIVISION ater Resources TYPE OF PERMIT NUPDES/DSW

STATUTE(S)

APPLICATION NO.

N.J.S.A.

NJ00001166

58:10A-1 et seq.

PERMIT TO

discharge stormwater runoff to Black Ditch and Slingtail, classified as TW-1 waters, in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

Ty the Authority of:

the W. Gaston Jr., P.E.

Director

Division of Water Resources

DEP AUTHORIZATION

DEP-008 2/84 THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.





CENT OF ENVIRONMENTAL PROTECT CN 402

Trenton, N.J. 08625

PERMIT



: New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments companying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.							
mit No.	Issuance Da	te .	Effective Date		Expiration Date	:	
T0000116	March 7		May 1, 1985	•	July 14	, 1989	
Name and Address of Applicant "rodex, Inc. urner Place F.O. Box 365 Piscataway, NJ 08854		Location of Activity/F Industrial Aver Fords, NJ 0886	nue	Name and Same as	d Address of Ow S Applicant	ner	
uing Division ater Resources		Type of Permit NJPDES/DSW		Statute(s N.J.S.) -let seg.	Application No. NJ0000116	

is permit grants permission to:

discharge stormwater runoff to Black Ditch and Slingtail, classified as TW-1 waters, in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

Approved by the Department of Environmental Protection By the Authority of:

John W. Gaston P.E.

Director

Arnold Schiffman

3/7/85

Water Quality Management

Division of Water Resources

The word permit means "approval, cartification, registration, etc."

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

NE .. JENSEY DEPARTMENT OF ENVIRONMENTAL CCTION

REPORT OF: PHONE CALL USIT

12/17	N/
DATE 12/8/83	REFERRED TO CHESTEN MONIS
TIME 14:45	
BUREAU OR OFFICE CLUTTAS EN	forcement FILE Fords, N.J. meddlesex County
	misselli county
ma labor	mahan 201 981-9180
PERSON CONTACTED	mahon PHONE NO. 981-9680 Transper Ondustrial and Flords, N.:
AFFILIATION/ADDRESS	Hill Manager and John N.
SUBJECT OF CALLIVISIT Dead	Fish in pond
SUMMARY OF CALL/VISIT	
mr. John Mahon	alled to report a fish Kill acent of the revelex Corp of their Cooling water
nooder Corp Co	alled to report a fish Kill
in a pand ad	scent to the rawler Cours
The number of	Olan 1100 This cont
the two well cong	Attain California
for in assurige	, of their cooling woll
·	
·	
*	
7/2 111	Tu Martie His Kill
ACTION RECOMMENDED THE WAY	1: 1 H. 1 1 1 1 1 1 1 1 259-212K
to the ormoran of	1. H. A. 1 + The full smile
and the Zocal H	Hall Defailment Woodbudge
NJ. This Comp	laint was investigation by
Fish and Hame	
	Ω
•	Chester Mours
	Signature
•	



(201) 981-5000



MAY 20 1986

15033

R.J. DEPT. OF ENVIRONMENTAL PROTECTION BUREAU OF AIR POLLUTION CONTROL

May 23, 1986

Mr. William Stephens Permit Administrator NJDEP Labor and Industry Building Room 1109 CN-027 Trenton, NJ 08625

Dear Mr. Stephens:

This is to request cancellation of all air pollution control permits at Nuodex Inc.'s Fords site, located on Industrial Avenue, Fords, New Jersey 08863. Attached is a list of the specific permit numbers involved and the equipment to which they apply.

If additional information is required, please contact Dr. Mario Q. Ceprini at (201)-981-5255.

Yours truly/

Robert C. Thierfelder Director of Operations

ec

Attachment

AIR POLLUTION PERMITS (FORDS)

erwit N	ο	Date of Approval	Expiration Date
000518	Dowtherm Stg. Tank	2/20/80	2/20/90
000519	Zinc Vent Stack	2/20/80	2/20/90
000520	Dowthern Vac. Pump Exhaust	2/20/80	2/20/90
001442	42,000 Gal. Stg. Tank Maleic Acid	2/20/80	2/20/90
001901	Toluene Storage Tank	4/16/80	4 /16/8 5 4/
003151*	12,000 Gal. Stg. Tank Butoxy Ethanol	3/3/81	3/3/86
003155*	Vacuum Jet System Tributoxyethyl Phosphate	3/3/81	3/3/86
003156*	No. 1 Reactor Vac. Jet	3/3/76	3/3/86
005411	Acrylic Polym r Bagger	6/6/77	6/6/87
005412	Acrylic Polymer Air Conveyor	6/6/77	6/6/87
005413	Methyl Methacrylate Stg. Tk.	6/6/77	6/6/87
005414	Spray Dryer	6/6/77	6/6/87
005415	Caustic Scrubber	6/6/77	6/6/87
007304**	No. 3 React r - Vac. Jet	2/7/78	2/7/88
007305*	8,000 Gal. Stg. Tank T-BEP	1/22/78	1/22/83
008778∻	10,000 Gal. Phosphorous Oxychloride	10/11/78	10/11/88
012652	Formox Tankage	1/7/81	1/7/86
012653	Formaldehyde Absorber	1/7/81	1/7/86
019099*	12,000 Vertical Stg. Tank Phenol	6/19/80	6/19/85
022614	O/C Toluene Stg. Tank	11/9/76	11/9/86
025195	Gasoline Storage Tank	11/22/76	11/26/86
029692	10,000 Gal. Stg. Tk. MeOH	9/30/77	9/30/87
029693	10,000 Gal. Methanol	9/30/77	9/30/87
*Turned o	over to Borg-Warner - April 1983		52

	D.	ate of Appror 1	Expiration Date
	10,000 Gal. Methanol	9/30/7/	9/30/87
45	10,000 Gal. Methanol	9/30/77	9/30/87
29697 ·	150,000 Gal. O/C Toluene	9/30/77	9/30/87
029698	150,000 P/C Toluene	9/30/77	9/30/87
029705*	12,000 2-EH	9/30/77	9/30/87
029706*	12,000 M/C Toluene	9/30/77	9/30/87
029708	100,000 Gal. Xylene	9/30/77	9/30/87
033101	600,000 Gal. Methanol	3/29/78	3/29/88
034372*	12,000 Gal. Isodecyl Alcohol	8/19/77	8/19/87
034373*	10,000 Gal. T-BEP	8/19/77	8/19/87
034374*	10,000 Gal. Glass Lined T-BEP/V-142	8/19/77	8/19/87
034375*	19,000 Gal. SS TOF	8/19/77	8/19/87
034376*	12,000 Gal. SS T-BEP/V142	8/19/77	8/19/87
037820*	100,000 Gal. SS T-BEP/V-142	4/1/78	4/1/83 Renewal Pendin
037821*	50,000 Gal. SS T-BEP/V-142	4/1/78	4/1/88
045583	Nuosept 95 Reactor	3/28/80	5/20/87
045665	Nuosept 95 Drumming Station	3/28/80	5/22/87
046049	250,000 Gal. Benzene Stg. Tk.	3/3/79	3/3/86
.046050	8,600 Gal. Benzene Stg. Tk.	2/11/81	3/3/86
046908	Hexa Centrigue Stack	12/1/81	2/12/85
048306	500 Gal. Mix Tank (Benzoic Acid)	12/12/80	12/12/85
048307	10,000 Gal. Benzoic Acid Stg. Tk	12/12/80	12/12/85
060491	Blower Vent, Benzoic Acid Mix Tk.	5/20/82	11/4/84
052205	10,000 Methanol Stg. Tk.	5/10/82	5/10/87
052206	10,000 Methanol Stg. Tk.	5/10/82	5/10/87
052207	10,000 Methanol Stg. Tk.	5/10/82	5/10/87
060491	Blower Vent, Benzoic Acid Mix Tk.	5/20/82	11/4/845
063826	10,000 Horizontal Underground Tank #6=U	2/25/83	2/25/88
			<i>c</i> 3



January 14, 1983

RCVD

JAN 18 8 SYAM '83

MNA

Mr. Michael Metlitz
New Jersey Department of Environmental Protection
Bureau of Environmental Evaluation and
Cleanup Responsibility Assessment
401 East State Street
Trenton, New Jersey 08625

RE: Results of Phase II Investigations Nuodex Inc. - Fords, NJ Site

ECRA Case No. 85-161

Dear Mr. Metlitz:

Enclosed please find three copies of "Results of Sampling, Analysis and Hydrogeological Assessments" for the subject site. The report details Phase II investigative efforts and summarizes the assessments from this and the first round of analyses.

Preparation of the QA/QC document for the analytical results for Phase II revealed thirty-eight soil sample fractions where analyses exceeded holding times. Upon discussion with Christine Hylemon of your Bureau on January 7, 1988, it was decided that reanalysis of samples below ECRA action levels would be required for those exceeding holding times. A summary of these samples to be resampled and reanalyzed is attached.

Results of the reanalysis will be forwarded to your attention as soon as they are available. As indicated in this submission, the next step in site evaluation will include a Risk Assessment and Cleanum Alternative evaluation.

If you have any questions or comments, please call me at 201-225-2000.

Very truly yours,

IT_CORPORATION

Calvin E. Gerhart, P.E.

Project Manager

Environmental & Civil Engineering

CEG:1h:bj1 #528410-01-06

cc: W. Fogelsanger - Tenneco

C. Hylemon - BEECRA

F. Jankowski - CDM

R. Pruessner - Tenneco

M. Stadler - Kaplan

G. Tyler - Giordano, Halleran & Ciesla

J. Wnek - Nuodex

ENG/L318-1tr

ATTACHMENT SOIL SAMPLES - REANALYSIS REQUIRED PHASE II EVALUATIONS - ECRA CASE NO. 85-161 NUODEX INC. - FORDS, NEW JERSEY SITE JANUARY, 1988

Area of Concern	Sample Designation	Analytical Parameters
Area A - Background	2A2 0-6" 2A3 0-6"	Pesticides/PCBs Pesticides/PCBs
Area B - West Pond	2B2 sediment 2B7 sediment	Base/neutrals Base/neutrals
Area D - Non Production Area	2D6 18"-24"	Base/neutrals
Area G Former Production Area Area I - Former	2G1 18"-24" 2G1 42"-48" 2G3 6"-12" 2G4 12"-13"	Acid Ex./Base/Neutrals Acid Ex./Base/Neutrals Acid Ex./Base/Neutrals Acid Ex./Base/Neutrals Volatile organics
Maleic Production Area Area J	2J1 54-60"	Strobane
Discontinued Production Area	2J2 54-60" 2J4 54-60" 2J6 Underground Tank	Strobane Strobane Volatile organics
Landfill 2 Note ²	Test Trench 10 Composite Trenches	Pesticides/PCB Acid Ex./Base/Neutrals
Septic Tank 1 Bldg. 25	Tank contents	Pesticides/PCBs Base/neutrals
Septic Tank 2 Bldg. 40	Tank contents	Pesticides/PCBs Base/neutrals
Leach field Note ² Bldg. 56S	42" depth	Pesticides/PCBs
Leach field Note ² Bldg. 22	34" depth	Pesticides/PCBs Volatile organics

Note 1 : A summary of all nonconforming samples is included with the QA/QC documentation included as Appendix K.

Note²: Neither Landfill 2 nor the leachfields are scheduled for reanalysis. Sufficient data has been generated to evaluate these areas.

ENG/L318-1tr

RESULTS OF SAMPLING, ANALYSIS AND HYDROGEOLOGICAL ASSESSMENTS NUODEX INC., FORDS, NEW JERSEY ECRA CASE NO. 85161

SUBMITTED BY NUODEX INC.
PISCATAWAY, NEW JERSEY

JANUARY 1988

TABLE OF CONTENTS

	PAGE
LIST OF TABLES	iii
LIST OF FIGURES	V
1.0 GENERAL INTRODUCTION	1-1
1.1 INTRODUCTION	1-1
1.2 HISTORY OF FACILITY ECRA COMPLIANCE	1-1
1.3 AREAS OF ENVIRONMENTAL CONCERN	1-4
2.0 DATA COLLECTION ACTIVITIES	2-1
2.1 SOIL AND SEDIMENT SAMPLING	2-1
2.2. SOIL BORINGS AND MONITOR WELL INSTALLATION	2-8
2.3 MONITOR WELL SAMPLING	2-11
2.4 LANDFILL INVESTIGATION PROCEDURES	2-12
2.5 SITE SURVEY	2-18
3.0 HYDROGEOLOGICAL INVESTIGATIONS	3-1
3.1 SLUG TESTS	3–1
3.2 STEP-DRAWDOWN TESTS	3-3
3.3 AQUIFER PUMPING TESTS	3-4
4.0 RESULTS OF INVESTIGATIONS	4-1
4.1 SITE GEOLOGY	4-1
4.2 SUMMARY OF THE HYDRAULIC CONDUCTIVITY TESTING	4-4
4.3 SOIL AND SEDIMENT ANALYTICAL RESULTS	4-6
4.4 GROUND WATER ANALYTICAL RESULTS	4-20
4.5 PROCESS SEWER SURVEY	4-30
4.6 LEACH FIELD INVESTIGATIONS	4-32
4.7 LANDFILL FINDINGS	4-34
4.8 LAKE SEDIMENT DISTRIBUTION	4-36

TABLE OF CONTENTS

(Continued)

5.0 DISCUS	SION (OF FINDINGS	5-1		
5.1 G	EOLOG\		5-1		
5.2 S	OIL Q	JALITY	5-1		
5.3 G	ROUND	WATER QUALITY	5-5	;	
6.0 SUMMAR	Y AND	CONCLUSIONS	6-1		
6.1 S	OIL A	ND SEDIMENT QUALITY	6-1		
6.2 G	ROUND	WATER QUALITY	6-5	5	
6.3 G	ENERAL	FINDINGS	6-7	,	
LIST OF RE	FEREN(CES	END	0F	TEXT
TABLES			END	0F	TEXT
FIGURES			SEE	AP	PENDIX
APPENDIX	Α	ECRA ACTION LEVELS FOR SOIL AND GROUND WATER	END	0F	TEXT
APPENDIX	В	SOIL ANALYTICAL DATA			
		VOLUME I - AREAS A, B, D, F, I, J, K VOLUME II - AREAS L, M, O, Q, R, ST VOLUME III - LANDFILL 1 & 2, FIELD AND TRAVEL BLANKS			
APPENDIX	С	GROUND WATER ANALYTICAL DATA, FIELD AND TRAVEL BLANKS			
APPENDICES	D E F	IN SITU AQUIFER PERMEABILITY TESTING REPORT VISUAL CLASSIFICATION OF SOILS LOG AND WELL CONSTRUCTION DIAGRAMS GROUND WATER WELL SAMPLING LOGS	N		•
APPENDIX	G	FIGURES			
APPENDICES	H I J	LANDFILL TEST TRENCHES PHOTO DOCUMENTATION TEST TRENCH CLASSIFICATION LOGS RISK ASSESSMENT, CLEANUP ALTERNATIVES AND REMEDIAL FEASIBILITY STUDY OUTLINES			
APPENDIX	K	ANALYTICAL QUALITY CONTROL REPORT			
		VOLUME I - SOIL SAMPLES			
		VOLUME II _ SOIL SAMPLES			

LIST OF TABLES

TABLE NO.	TITLE
· 1	AREAS OF ENVIRONMENTAL CONCERN
. 2	SOIL AND SEDIMENT SAMPLE SUMMARY
3 .	SUMMARIZED STRATIGRAPHY
4	SHELBY-TUBE SAMPLES LOCATION DATA
5	SUMMARY OF PHASE II GROUND WATER SAMPLING AND ANALYSIS
6	SURVEY DATA
7	HYDRAULIC CONDUCTIVITY VALUES - SHALLOW AND DEEP AQUIFERS
8	WELL CHARACTERISTICS - PUMP TEST #1
9	WELL CHARACTERISTICS - PUMP TEST #2
10	WELL CHARACTERISTICS - PUMP TEST #3
11	HYDRAULIC CONDUCTIVITY DATA - PUMP TEST #1
12	HYDRAULIC CONDUCTIVITY DATA - PUMP TEST #2
13	SHALLOW GROUND WATER DATA
14	DEEP GROUND WATER DATA
15	SOIL AND SEDIMENT SAMPLE ANALYTICAL PARAMETERS
16	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA A - BACKGROUND AREA
17A	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - DRY WEIGHT - AREA B WEST LAKE
17B	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - WET WEIGHT - AREA B WEST LAKE
18A	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - DRY WEIGHT - AREA B MIDDLE LAKE
188	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - WET WEIGHT - AREA B MIDDLE LAKE
19A	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - DRY WEIGHT - AREA B HARTMANNS POND
198	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - WET WEIGHT - AREA B HARTMANNS POND
20	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA D - NON-PRODUCTION AREA
21	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA F - GENERAL PLANT PRODUCTION AREA
22	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA G - GENERAL PLANT PRODUCTION AREA
23	SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA I - MALEIC PRODUCTION AREA

(Continued)

TABLE NO.

TITLE

rds. ٦e SUMMARY OF SOIL SAMPLE ANALYTICAL 24 PRODUCTION AREA 25 SUMMARY OF SOIL SAMPLE ANALYTICAL R. 26 SUMMARY OF SOIL SAMPLE ANALYTICAL RESUL,__ SUMMARY OF SOIL SAMPLE ANALYTICAL RESUL 27 DISCONTINUED PRODUCTION AREA SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA M' - COMPOSITE SAMPLES -28 SLUDGE LAGOON AREA SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA M - DISCRETE SAMPLES -29 SLUDGE LAGOON AREA SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA O - SLUDGE DISPOSAL AREA 30 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA Q - NON-VEGETATIVE 31 GROWTH 32 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA R - MARSHLANDS: 33 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - AREA ST - SEPTIC TANKS 34 SUMMARY OF VOLATILE ORGANIC COMPOUND GROUND WATER ANALYTICAL RESULTS 35 SUMMARY OF BASE/NEUTRAL COMPOUND GROUND WATER ANALYTICAL RESULTS INORGANIC METALS. PETROLEUM HYDROCARBONS. FORMALDEHYDE. 36 COLIFORM, AND pH GROUND WATER ANALYTICAL RESULTS 37 PROCESS SEWER INTERNAL INSPECTION RESULTS SUMMARY OF LEACHFIELD AREAS RESULTS 38 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - LANDFILL 1 39 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - LANDFILL 2 40

LIST OF FIGURES

FIGURE NO.	TITLE
1	FACILITY DIAGRAM WITH SOIL SAMPLE LOCATIONS
2	SITE MAP WITH MONITOR WELL, STAFF GAGE, AND SOIL BORING LOCATIONS
3	TIME-DRAWDOWN GRAPH - PUMPING TEST #1 MW-K17D & MW-K17S
4	TIME-DRAWDOWN GRAPH - PUMPING TEST #1 MW-J7D & MW-J7S
5	TIME-DRAWDOWN GRAPH - PUMPING TEST #1 MW-L30D & MW-L30S
. 6	TIME DRAWDOWN GRAPH - PUMPING TEST #2 MW-B27D & MW-B27S
7	TIME DRAWDOWN GRAPH - PUMPING TEST #2 MW-G4D
8	TIME DRAWDOWN GRAPH - PUMPING TEST #2 MW-B9S
9	TIME DRAWDOWN GRAPH - PUMPING TEST #2 MW-B100
10	TIME DRAWDOWN GRAPH - PUMPING TEST #3 MW-6D
11	TIME DRAWDOWN GRAPH - PUMPING TEST #3 MW-21D
12	TIME DRAWDOWN GRAPH - PUMPING TEST #3 MW-22D
13	CORRELATION LINES FOR STRATIGRAPHIC FENCE DIAGRAM
14	STRATIGRAPHIC FENCE DIAGRAM
15	SHALLOW GROUND WATER CONTOUR MAP-NOVEMBER, 1987
16	DEEP GROUND WATER CONTOUR MAP-NOVEMBER, 1987
17	TOTAL VOLATILE ORGANIC COMPOUNDS CONCENTRATIONS IN SHALLOW ZONE
18	TOTAL VOLATILE ORGANIC COMPOUNDS CONCENTRATIONS IN DEEP ZONE
19	TOTAL BASE/NEUTRAL COMPOUNDS CONCENTRATIONS IN SHALLOW ZONE
20	TOTAL BASE/NEUTRAL COMPOUND CONCENTRATIONS IN DEEP ZONE
21A	XYLENE CONCENTRATIONS IN SHALLOW ZONE
21B	XYLENE CONCENTRATIONS IN DEEP ZONE
22A	CHLOROTOLUENE CONCENTRATIONS IN SHALLOW ZONE
22B	CHLOROTOLUENE CONCENTRATIONS IN DEEP ZONE
23A	CHLOROBENZENE CONCENTRATIONS IN SHALLOW ZONE
23B	CHLOROBENZENE CONCENTRATIONS IN DEEP ZONE
24A	TOLUENE CONCENTRATIONS IN SHALLOW ZONE

LIST OF FIGURES

(Continued)

248	TOLUENE CONCENTRATIONS IN DEEP ZONE
25	ARSENIC CONCENTRATIONS IN SOILS
26	CADMIUM CONCENTRATIONS IN SOILS
27	CHROMIUM CONCENTRATIONS IN SOILS
28	COPPER CONCENTRATIONS IN SOILS
29	LEAD CONCENTRATIONS IN SOILS
30	ZINC CONCENTRATIONS IN SOILS
31	COMPOSITE METALS CONCENTRATIONS IN SOILS
32	TOTAL PETROLEUM HYDROCARBONS IN SOILS
33	TOTAL VOLATILE ORGANIC CONCENTRATIONS IN SOILS
34	TOTAL BASE/NEUTRAL COMPOUNDS CONCENTRATIONS IN SOILS
35	PESTICIDES AND PCBs CONCENTRATIONS IN SOILS
36	STROBANE CONCENTRATIONS IN SOILS
37	TOXAPHENE CONCENTRATIONS IN SOILS
38	TOTAL XYLENE CONCENTRATIONS IN SOILS
39	TOTAL CHLOROTOLUENE CONCENTRATIONS IN SOILS
40	PROCESS SEWER SYSTEM TELEVISION INSPECTION
41	WATER DEPTH IN THE ON-SITE WATER BODIES
42	THICKNESS OF UNCONSOLIDATED SEDIMENT IN THE ON-SITE WATER BODIES

DEPTH TO BASIN HARD BOTTOM IN THE ON-SITE WATER BODIES

TITLE

FIGURE NO.

43

44

45 WEST LAKE VERTICAL PROFILE A-A'
46 WEST LAKE VERTICAL PROFILE B-B'
47 MIDDLE LAKE VERTICAL PROFILE C-C'
48 MIDDLE LAKE VERTICAL PROFILE D-D'
49 HARTMANNS POND VERTICAL PROFILE E-E'
50 HARTMANNS POND VERTICAL PROFILE F-F'

VERTICAL PROFILE CROSS SECTION LINES

1.0 GENERAL INTRODUCTION

1.1 INTRODUCTION

This report has been prepared for the Nuodex Inc. facility located in Fords, (Woodbridge Township) New Jersey. Primarily, the report describes the detailed site assessments performed during the months of June through October, 1987. The report also summarizes the results of this and the previous site assessment (conducted in the winter months of 1986). Both site assessments were performed in accordance with New Jersey's Environmental Cleanup Responsibility Act (ECRA).

1.2 HISTORY OF FACILITY ECRA COMPLIANCE

On June 11, 1985, an initial proposal "Sampling and Analysis Plan for the Environmental Cleanup Responsibility Act (ECRA)" was submitted to the Bureau of Industrial Site Evaluation (BISE). The plan addressed the areas of potential environmental concern identified in previous site inspections conducted by Princeton Aqua Science, a subsidiary of IT Corporation (PAS/IT). The Sampling Plan was designed in conjunction with the Site Evaluation Submission (SES), also compiled by PAS/IT.

The first of two facility inspections was conducted by the New Jersey Department of Environmental Protection (NJDEP) on July 16, 1985. Production areas and facility boundaries were reviewed with NJDEP personnel to familiarize them with the site. On August 5, 1985, the second inspection was conducted involving Nuodex, PAS/IT and NJDEP personnel. The primary objective of this inspection was to review the interior and exterior former production areas.

A BISE "Report of Inspection" was issued on September 2, 1985. It contained a review of inspection findings and deficiencies and actions required on the part of Nuodex. Additional monitor wells and details of required ground water analysis was requested by NJDEP to be included in the Sampling and Analysis Plan.

On September 19, 1985, NJDEP, Nuodex and PAS/IT personnel met in Trenton, New Jersey to review the requirements of the September 2, 1985 letter from BISE and finalize proposals for a Sampling and Analysis Plan. A separate meeting was conducted with NJDEP, Nuodex, PAS/IT, Sherwin-Williams, and personnel from Earth Technologies to stress the Department's interest in dealing with the regional ground water problem in the Fords, New Jersey area.

On September 29, 1985, additional BISE comments on the Sampling and Analysis Plan were issued. Requested changes included proposals discussed at the September 19, 1985 meeting and involved the installation of a number of stainless steel monitor wells.

Final revision of the Sampling and Analysis Plan was submitted to BISE on October 3, 1985. On December 2, 1985, BISE formally approved the Sampling and Analysis Plan. The results of the first sampling plan were submitted to NJDEP on March 11, 1986.

Based on the results of the first round of sampling and analysis at the Fords site (referred to herein as Phase I), Nuodex proposed a feasibility study be conducted to further define the extent of materials on the property and determine a cost effective, environmentally sound cleanup plan. The study proposal was submitted to NJDEP on May 23, 1986 as a Feasibility Study Detailed Work Plan.

On June 23, 1986 Nuodex received BISE's comment letter reviewing the March 11, 1986 results of the first round of sampling. This transmittal indicated requirements for additional soil and ground water sampling for facility evaluation and stipulated general formats for presentation of future data reports.

Nuodex requested a meeting with BISE to clarify several technical issues, including specific facility areas requiring additional sampling and the need to extend Administrative Consent Order (ACO) time frames for report submissions based on the complexity of the Fords evaluation. Representatives of the NJDEP agreed with this administrative approach and on October 29, 1986, a draft ACO amendment was received by Nuodex. The draft ACO also contained comments that addressed the NJDEP review of the soil and ground water sampling

proposals that were detailed in the May 23, 1986 Feasibility Study Detailed Work Plan.

Upon receipt of the draft ACO amendment, Nuodex provided their position on the Department's requests for additional sampling and specific requests for extending ACO time frame requirements in a December 12, 1986 letter. On February 27, 1987, Nuodex, Tenneco, NJDEP, and IT personnel met to discuss the sampling and analysis requirements being requested by the NJDEP. Specifically, this included the number of samples needed to evaluate the lakes at the site as well as the number of samples and analysis needed to evaluate other areas of the facility.

Based on the changes in the scope of the sampling plan, the NJDEP requested that Nuodex submit a sampling plan addendum for review. Upon execution and the reporting of results of this plan, the NJDEP would consider the details of any cleanup plan feasibility studies or risk assessments that may be used to evaluate the site. The sampling and analysis plan addendum was submitted to NJDEP on April 7, 1987 and this sampling and analysis plan addendum was conditionally approved by NJDEP on June 16, 1987. In accordance with the conditions of this approval and the terms of the ACO amendment that was signed on July 17, 1987, the sampling plan results must be provided to NJDEP by December 18, 1987 (180 days). Nuodex formally requested an extension to this deadline for an additional thirty days. The submission of this document fulfills this reporting requirement. This second round of site assessments is referred to herein as Phase II.

Nuodex has discussed the need to conduct a risk assessment and feasibility study to properly evaluate cleanup approaches for the site. On August 19, 1987, a meeting was held with Nuodex, Tenneco, IT, and NJDEP to determine any requirements for these studies relative to project scope and time frames. During these discussions, NJDEP representatives indicated that a health and environmental risk assessment is required if concentrations exceeding ECRA action levels are to remain on site. In addition, it was indicated that as long as the projects are a reasonable and necessary part of the evaluation process, the request for a site cleanup plan would be issued by NJDEP after receipt of the final risk assessment and feasibility study report. As follow up to these agreements with the NJDEP, this submission presents the detailed

outlines for the risk assessment and feasibility study with anticipated project descriptions and time frames.

1.3 AREAS OF ENVIRONMENTAL CONCERN

The areas of environmental concern at the site have been discussed in both the March 3, 1986, "Results of Sampling and Analysis Plan for Compliance with ECRA" and in the April 7, 1987 "Sampling and Analysis Plan Addendum". Table 1 provides a list of each area, a description and a list of the parameters of concern.

Discussions on compound concentrations in specific areas, boring locations, and monitor wells are based on current ECRA action levels as presented in Appendix A of this document. Analysis of all volatile, base/neutral and acid extractable organics include NBS library searches in accordance with Environmental Protection Agency (EPA) procedures. Throughout this report "metals" refers to arsenic, cadmium, chromium, copper, lead, and zinc, unless otherwise specified. Samples collected at a depth were generally the 0.5 foot increment above ground water, except where noted.

4.0 RESULTS OF INVESTIGATIONS

4.1 SITE GEOLOGY

This section presents information gathered during Phase II activities and where applicable, information acquired from previous investigations to describe site geology at the Nuodex, Fords location.

4.1.1 Stratigraphy

The investigation of the Nuodex, Fords site has uncovered many stratigraphic complexities typically associated with Coastal Plain deposits. Locally, the area is underlain by alternating sequences of marine and beach complex silt, clay and sand layers. Within any particular sand sequence, discontinuous lenses of clay and silt may occur. These layers have been identified in borings performed by Converse Ward Davis Dixon, Inc., Geraghty & Miller Inc., Earth Technology Corporation (consultants for Sherwin-Williams) and IT Corporation. The stratigraphy of the site has been inferred from all of the available Nuodex well logs. Figure 13 indicates the correlation lines used to develop the stratigraphic fence diagram presented in Figure 14, an illustration of the interfingering relationships of the different strata encountered. The six strata under the Fords site are briefly described below:

- Fill Fill material consisting of multi-colored coarse to fine-grained sand and where encountered ranges in thickness from 2 to 4 feet.
- 2. Organic Silt Interbedded with Silty Clay The silty clay and/or organic silt layer is present over a majority of the site. This layer varies locally in organic content and grades into an organic silt. Thickness ranges from 0 to 10 feet as this layer pinches out to the north and east. This clayey silt interfingers with the underlying yellow sand layer. The interfingering nature of the silt layer decreases as it extends east to west across the Nuodex site.
- 3. Yellow-Brown to Gray Coarse to Fine-Grained Sand The yellow-brown sand layer was encountered in each of the Phase II borings throughout the area. This water bearing sand layer interfingers with the organic silt layer as the sand layer dips and pinches out to the south. The sand overlies a gray silty clay. Where

present, the thickness of this strata ranges from 2 to 12 feet.

- 4. Gray Silty Clay This layer was encountered throughout the area of study during the Phase II investigation and underlies the yellow-brown sand layer. The gray silty clay varies in thickness from 2 to 5 feet and appears to be continuous across the Nuodex property. This layer was encountered in boring SB-2, SB-3, SB-5 and monitor well locations G26D, A34D2 and M37D2. The average thickness of this layer in the borings was four feet.
- 5. Interbedded Gray to Brown to Red-brown Sand and Gravel and Brown to Gray Clay and Silt This layer is encountered in borings throughout the property and is the deep water bearing sand. The thickness of this strata ranged from 20 feet in the western portion of the site while thickening to 40 feet to the east.
- 6. Blue-Gray Clay A blue-gray to olive green silty clay underlies the red-brown sand and gravel layer. Several Nuodex borings have encountered this clay layer, however, the maximum thickness has not been obtained. Indications from boring SB-1 through SB-5 are that this layer is continuous throughout the entire site and the minimum thickness ranges from 10 to 43 feet. At boring location SB-5, the clay layer was encountered from 37 feet to 80 feet below ground surface.

4.1.2 <u>Hydrogeology</u>

Determination of ground water flow direction is dependent upon correct interpretation of the stratigraphy and differentiation of water bearing zones. As recognized in previous reports by Converse Ward Davis Dixon, Inc. and Geraghty & Miller, Inc., there are two major water bearing zones beneath the Nuodex site. The two zones are the yellow sand shallow water table zone and the red-brown sand and gravel deep water bearing zone. The shallow aquifer is unconfined and separated from the deep aquifer by the semi-confining gray silty clay layer.

4.1.3 The Shallow Water Bearing Zone

The shallow zone is the upper of the two major water bearing zones. It consists of a yellow brown to gray, coarse to fine-grained sand and is under unconfined (water table) conditions. The shallow water bearing sand is not present throughout the site. The thickness ranges from 10 to 20 feet beneath

the industrial portion of the site and pinches out toward the Raritan River. This layer is truncated near the sludge lagoon and replaced by the organic silt layer toward the south. As illustrated in Figure 14, this zone has a lower boundary consisting of clay, organic silt or both. The upper gray silty clay is approximately 2 to 5 feet thick with an average thickness of four feet. The organic silt ranges from 0 to 10 feet in thickness beneath the industrial portion of the site. A vertical head differential in a downward direction, ranging from 0.16 to 5.0 feet, exists across this layer. This head differential suggests that the silty clay layer(s) acts as a semi-confining layer for the underlying sand (the deep water bearing zone).

The flow direction of ground water in the shallow zone was determined using all available monitor wells screened in the upper sand layer. Those shallow wells which are not screened in this layer, those predominantly in the southern portion of the site, have elevations presented but not contoured in Figure 15. Figure 15 illustrates two south to southeasterly flow directions for the shallow zone. Surface water elevations were obtained from the seven staff gages installed and surveyed during this investigation and were used in contouring the shallow zone. Shallow ground water and surface water elevation data are listed in Table 13.

4.1.4 The Deep Water Bearing Zone

The deep water bearing zone consists of an interbedded gray to red-brown sand and gravel and brown to gray clay and silt. As displayed in Figure 14, the deep zone is separated from the shallow zone by a gray silty clay or an organic silt layer or both. These layers, either in conjunction or individually, act as a semi-confining layer. The lower blue-gray clay is the lower hydraulic boundary beneath the Nuodex site.

The flow direction of the deep water bearing zone confirms previous investigations which indicated a south to southeasterly flow towards the Raritan River. The data obtained from the monitor wells screened in the deep zone is consistent throughout the site indicating that there are no additional aquifer divisions under the site. Ground water elevation data for the deep zone is presented in Table 14. Contoured piezometer elevations for the deep

water bearing zone are presented in Figure 16.

4.2 SUMMARY OF THE HYDRAULIC CONDUCTIVITY TESTING

As described in Section 3.0 of this report, hydraulic conductivity testing using both field and laboratory methods were performed during this investigation. The results are presented in this section. Since the aquifer pump testing method intergrates the hydraulic conductivity over a proportionally much larger area, these test results should be accorded the greatest weight when selecting representative values for use in analytical or digital models.

Slug tests measure a relatively small volume of the aquifer and may not include the most permeable pathways that control the effective hydraulic conductivity of the system. Furthermore, the installation of a monitor well inevitably disturbs the formation. Comparison of the slug test results of the lower (Farrington Sand Member) sand at locations where aquifer tests have been conducted indicate that the slug test values to be less permeable than aquifer test values by a factor of one order of magnitude.

Shelby-tube samples were shipped to the IT laboratory in Pittsburgh, Pennsylvania for permeability tests. Vertical hydraulic conductivity testing were performed employing a triaxial cell-based, constant volume, constant head permeameter. In a triaxial cell, the soil specimen is enclosed in a flexible membrane. The confining pressure, which minimizes the possibility for leakage along the sides of the soil specimen, can also be varied to simulate in situ conditions. The results of the laboratory hydraulic conductivity testing are indicated in Tables 11 and 12. Laboratory data often reflect a lower permeability than field determined permeability by one order of magnitude.

With these considerations in mind, the hydraulic conductivity data are assessed and representative values are selected in the discussion that follows.

4.2.1 The Water Table Zone

Calculated values of hydraulic conductivity for the shallow zone range from 2.8×10^{-3} to 5.7×10^{-4} cm/sec. As expected, the lower permeabilities correspond to locations at which the shallow yellow-brown sand is pinching out and the organic silt layer is predominant. This occurs in the area of the former sludge lagoons where the shallow water-bearing sand is virtually absent. Values of hydraulic conductivity on the order of 10^{-3} cm/sec correspond to monitor wells screened within the upper yellow-brown sand where this relationship is not present. Values of 2.8×10^{-3} to 7.8×10^{-3} cm/sec are typical permeabilities of the shallow zone beneath the central and eastern portion of the site.

4.2.2 The Deep Water Bearing Zone

The deep water bearing zone (Farrington Sand Member) is the major of the two water bearing zones. Hydraulic conductivity values calculated from slug test data range from 1.8 X 10^{-3} to 9.5 X 10^{-3} cm/sec. Transmissivity values calculated from pumping test data range from 600 to 1500 ft/day. By applying an average saturated thickness of 30 feet for the lower zone, hydraulic conductivities range from 10^{-2} to 10^{-3} cm/sec. These values are in agreement with published values for the Farrington Sand Member. The storativity of the lower sand ranges from .002 to .0005. These values fall within anticipated values of a semi-confined aquifer.

4.2.3 The Semi-Confining Layer(s)

The organic silt and silty clay act as a semi-confining layer overlying the deep water bearing zone. As illustrated in the stratigraphic fence diagram shown in Figure 14, one or both of the layers are present across the entire site. Aquifer test data and laboratory testing indicate that the vertical hydraulic conductivity of the upper clay layer is 10^{-8} cm/sec, and the hydraulic conductivity of the organic silt is 10^{-6} cm/sec. This difference is consistent for both laboratory and field methods. Water level difference up to five feet in magnitude between the shallow and deep water bearing zones result in downward hydraulic gradients across the semi-confining layer of 0.02

TABLE 15 SOIL AND SEDIMENT SAMPLE ANALYTICAL PARAMETERS

NUODEX INC FORDS, NEW JERSEY					
Area	Sample Location	Number of Samples for Analysis	Sample Depth ^(a) (ft)	Sample Matrix	Analytica Parameter(b)
A	2A1-2A3	3	0-0.5	Soil	Metals, Pest., PCBs
В	281-2827	27	Composite of sediment depth	Lake sediment	Metals
	287, 2811	2	Top third of sediment layer	Lake sediment	Metals
	·	2	Middle third of sediment layer	Lake sediment	Metals
		2	Bottom third of sediment layer	Lake sediment	Metals
		2	Composite of sediment depth	Lake sediment	E.P. Toxicity
	2819	1	Top third of sediment layer	Lake sediment	Metals
		1	Middle third of sediment layer	Lake sediment	Metals
		1	Bottom third of sediment layer	Lake sediment	Metals, BN, VO
		. 1	Composite of sediment depth	Lake sediment	E.P. Toxicity
	2B23	1	Bottom third of sediment layer	Lake sediment	BN, VO

_	Area	Sample Location	Number of Samples for Analysis	Sample Depth ^(a) _(ft)	Sample Matrix	Analytica) Parameter(b)
		2B2, 2B3, 2B6, 2B7, 2B10, 2B12, 2B15, 2B16, 2B17	9	Composite of sediment depth	Lake sediment	BN, VO
	D	203-208	6	0-0.5	Soil	BN, Mercury
		203-205, 207, 208	5	0-0.5	Soil	VO
		2D6	1 .	1.5-2.0	Soil	VO
	F	2F1-2F2	2	1.5-2.0	Soil	BN, VO, Phenols
		2F2	1	4.5-5.0	Soil	BN, VO, Phenols
	G	2G3 2G4 2G5II, 2G6II		0.5-1.0 1.0-1.5 1.5-2.0	Soil Soil Soil	BN, TPH, Metals BN, TPH, Metals BN, TPH, Metals
,		2G1, 2G2 2G2 2G1		1.5-2.0 2.0-2.5 3.5-4.0	Soil Soil Soil	BN BN BN
	Ι.	211-216	6	1.5-2.0	Soil	VO
		216	6	2.5-3.0	Soil	VO .
		213-215	3	3.5-4.0	Soil	V0
		211,212	2	4.0-4.5	Soil	VO
	J	2J1-2J5	5	4.5-5.0	Soil	VO, BN, Metals



<u>Area</u>	Sample :	Number of Samples for Analysis	Sample Depth(a) (ft)	Sample Matrix	Analytical Parameter(b)
J	2J6	1	Existing tank bottom	Liquid/s ludge	BN, VO
K	2K1, 2K2, 2K6, 2K7, 2K9	5	0-0.5	Soil	BN, Pest., Mercury
	2K9	1 '	0.5-1.0	Soil	BN
	2K2, 2K6, 2K7, 2K9	4	1.5-2.0	Soil	VO, Mercury
	2K2	1	2.3-2.8	Soil	Pest., VO, Mercury
	2K8	1	2.0-2.5	Soil	BN, Pest., VO, Mercury
	2K9	1	2.5-3.0	Soil	BN, Pest., VO, Mercury
<u>:</u>	2K5, 2K6	1	3.0-3.5	Soil	BN, Pest., VO, Mercury
L	2L6, 2L7	2	1.5-2.0	Soil	VO
	2L16	1	1.5-2.0	Soil	Chlorotoluene
•	2L4	1	2.0-2.5	Soil	BN, Metals, VO, Pest.
	2L14	1	2.5-3.0	Soil	Chlorotoluene
	2L9	1	3.0-3.5	Soil	BN, Metals, VO, Pest.
	2L10-2L12	3	3.0-3.5	Soil	Strobane
	2L13, 2L15, 2L17	3	3.5-4.0	Soil	Chlorotoluene
	2L5	1	3.5-4.0	Soil	BN, Metals, VO, Pest.

Area	Sample Location	Number of Samples for Analysis	Sample Depth(a) (ft)	Sample <u>Matrix</u>	Analytical Parameter(b)
L	2L7	1	4.0-4.5	Soil	Base Neutrals, Metals,
	2L1-2L3, 2L6, 2L8	5	4.5-5.0		Volatiles, Pesticides BN, Metals, VO. Pest.
М	2M1-2M12	4 Composites abo	To 0.5 feet ve ground water	Soil	PP, TPH
	2M13-2M18	6 .	0.5-1.0	Soil	BN, AE, Metals, TPH, VO
	2M16-2M18	3 ·	2-2.5.0		
	2M15	1	2.5-3.0	,	BN, AE, Metals, TPH, VO
0	201-2015	15	0-0.5	Soil	Metals
	202, 203, 204 207, 2010, 20 2013		0.5 below sludge layer	Soil	Metals
	201, 203, 204	, 206 4	0-0.5	Soil	Pest.
	207, 208, 2010 2011	0, 4	0-0.5	Soil	BN
Q	204	1	0-0.5	Soil	Metals
	201-203, 205	4	3.0-3.5	Soil	Metals
R	2R1-2R12	12	0-0.5	Soil	Metals
	2R10	1	2.0-2.5	Soil	Metals
	2R4, 2R6	2	2.5-3.0	Soil	Metals

Area	Sample Location	Number of Samples for Analysis	Sample Depth(a) (ft)	Sample Matrix	Analytica Parameter(b)
Septic tanks	2ST1-2ST2	2	Composite of sludge depth	Sludge	PP, TPH PP, TPH
Landfills	TP1-TP16 TP1-TP16	16	Trench bottom	Soil	PP, TPH
Leachf ields	B1dg. 56-S,	4 Composites			
	B1dg. 22	2		Soil	PP, TPH

PP - Priority Pollutants
EP Toxicity - EP Toxicity Leachate Analysis
BN - Base/Neutral Extractable Organics
VO - Volatile Organics
TPH - Total Petroleum Hydrocarbons
Pest. - Pesticides

· V0

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA A - BACKGROUND AREA NUODEX INC. - FORDS. NEW JERSEY

****	****	***	****
SAMPLE POINT	2A1	2A2	2A3
SAMPLE DEPTH (inches)	∅-€	Ø-6	Ø-6
SAMPLE DATE	7/31/87	7/31/87	7/31/87
- 在本本本本本本本本本本本本本本本本本本本本本本本本本本	****	****	******
PARAMETER:			

INORGANICS:			
Arsenic	Ø. 20	1.0	1.1
Cadmium	ND	ND	ND
Chromium	2.9	4.4	6.8
Copper	18	120	93
Lead	26	180	190
Zinc	6.3	20	17
PESTICIDE COMPOUNDS:	ND	ND	ND
PCB COMPOUNDS:	ND	ND	ND ·
	•		

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION (DOM).
"ND" - NOT DETECTED: SINCE DETECTION LIMITS VARY,
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TITIES AND THE RESERVE

TABLE 17A SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - DRY WEIGHT AREA B - WEST LAKE NUODEX INC. - FORDS, NEW JERSEY

*******************	*******	*********	*********	**********	********	*********	***********		**********	*********		**********	******
SAMPLE POINT	581	+ 585	• 2B3	284	* 295	• 2B6	• 2B7	•	2B7		• 2B8	• 2B9	• 2B10
SAMPLE DEPTH	• GRAB	* GRAD	• GRAB	• GRAB	GRAB	• GRAB	• GRAB	• TOP	MIDDLE	BOTTOM	• GRAB	• GRAB	• GRAB
SAMPLE DATE	* 8/12/87	* 8/12/6	17 * 8/12/87	* 8/12/87	• 8/12/87	• 8/12/87	• B/12/87	8/12/87	8/12/87	8/12/87	8/12/87	* 8/12/87	* 8/12/87
*******************	********	********	**********	*********	*******	*********	********	**********	**********	**********	*********	*********	********
PARAMETERS	•		•										
*******************					•	-	•				·		
INORGANICS:													
Arsenic	58.0	2.0	58. 0	43. 0	50. 0	44.0	22.0	2.0	1.3	ND	7.1	31.0	23.0 .
Cadoius	9.8	0. 3		8.6	11.0	12.0	8. 2	3. 2	ND	0.5	2.0	8. 5	6.9
Chromium	380.0	6. 8		226.0	350.0	458. Ó	318.0	22.0	12.0	17.€	66. 0	270.0	240.0
Copper	689. 0	10.0	and the second second	750.0	1200.0	930. 0	550. 0	94. ●	9.0	6.5	210.0	539. 9	346. 0
Lead	560.0	22.0		580.0	890.0	728. 9	510.0	74.0	16.0	15.6	160.0	520.0	480.0
Zinc	2000.0	21.0		2290.0	2680.8	2888. 0	1600.0	70.0	9. 3	1.6	460.8	1886.8	1400.0
VOLATILE ORGANICS:	•												
Chloroform	NA	ND	ND	NA	NA	MD	0.2	NA	NA	N/A	NA	NA	ŇD
RASE/NEUTRAL DRGANICS:					•	•			• •				
Bis (2-Ethylhexyl) phthalate	NA	ND	34. ò	NG	MA	720.0	ND	MA	NA	NA	NA	NA	ND
Di-n-Octylphthalate	, NA	ND	MD	NA	NA	11.0	ND	NA -	NA .	NA 	NA 	. NA	ND
BASE/NEUTRAL PRIORITY						731.0	ND	NA NA	NA	NA ·	NA	. NA	ND
POLLUTANT TOTAL	NA	, ND	34.0	NA	, NA	/31.0	AU	• •	787	TWT .	IWI .	T W1	1111
EP TOXICITY COMPOUNDS:	,NA	MA	NA	NA	NA	- NA	•	· NA	NA	NA	NA ·	NA	NA

DNLY PARAMETERS DETECTED IN AT LEAST DNE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

7

[&]quot;ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NA" - NOT ANALYZED.

[&]quot;"" DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLOROTOLUENE WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE ORGANIC FRACTIONS.

ONLY THE BASE/NEUTRAL RESULT IS REPORTED.

TABLE 17B SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - MET MEIGHT AREA B - MEST LAKE NUODEX INC. - FORDS, NEW JERSEY

*******************	******	# 1 1 1 5 5 5 1 5 1 4 1 4	100 44 # 40 4 44 44 1	## * #################################		******	*********		*********	********	********	**********	**********
SAMPLE POINT .	2B1	4 282	• 2B3	* 2B4	285	• 296	297	•	297	•	2B8	+ 2 9 9	• 5910
	GRAB	• GAAB	• GRAB	• GRRB	 GRAB 	 GRAB 	• GRAB	+ TOP	MIDDLE	BOTTOM	GRAB	• 6RAS	• GRAB
SAMPLE DATE + 8	/12/87	• 8/12/87	8/12/87	• B/12/87	8/12/87	8/12/87	• _8/12/87	+ 8/12/87	8/12/87	8/12/87	8/12/87	8/12/87	• 8/12/87
***********************	******	********	**********		*******	********	**********		**********	***********	*********	•••	*********
PARAMETERS 4													

INORGANICS:										•			
*****	-	/											
Ansenso	7.5	1.6	8.8	9.0	6.5	5. 3	3.8	1.3	1.1	ND	3.2	4.0	3. 8
Cadm; um	1.3	0.2	1.4	1.8	1.4	1.0	1.4	2.●	NO	9. 4	0,9	1.1	1.1
Chronium	49.0	5. 3	52. 0	46. 9	46. 0	55. 0	53. 0	14.2	10. 0	13. 0	30. 0	35. 0	38. 0
Copper	78.0	8.2	110.0	157.₽	152.0	112.9	93.0	59.8	7.4	5. 1	93. ●	69. €	55. 6
: Pad	73.0	17. 4	85. ₽	166.0	184. 0	87. 0	86. 0	46. 0	13.6	11.6	70. 0	68. ●	77.0
7. n;	257.0	16. 1	379. ●	473.0	336. 0	342.0	268.0	44.8	7.6	1.3	209.0	238.	226. 8
VOLATILE ORGANICS:													
Chloroform	NA	, MD	ND `	NA	NA	ND	MD	NA ·	MA	NA	NA	NA	MD
HASE/HEUTRAL ORBANICS:													
Bis (2-ethylhenyl) Phthalate	MA	ND	5.1	NA	NE	86. oʻ	100	•	MA	NA	MA	NA	MO
D Octylphthalate	NA .	CM	GA	MA	NA	1.3	· ND	100	MA	NA	NA	MA	ND
DAGE/NEUTAL PRIORITY				*******									
POLILITANT TOTAL	VA	ND	5. :	NA	U L	87.3	· ND	MA	· NA	NA	NA NA	NA	NE
FF TOYTOTTY COMPOUNDS:	NI:	NA	NG.	NA	NG.	NA		NA	MA	NA	NA	MA	MA

DALY PARAMETERS DETECTED IN AT LEAST DIE SAMPLE ARE SHOWN ABOVE.



ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

^{&#}x27;NA - NO ANALYJED.

¹⁰ DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHICHOTOLU WE WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE ORGANIC FRACTIONS,

JN + 14 245:/WELTEL RISHLY S REPORTED.

TABLE 18A
SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - DAY WEIGHT
AREA B - MIDDLE LAKE
NUODEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	• 2B11	**************************************	2 B 11	**********	• 2812	+ 2B13	+ -2B14	• 2915	+ 2B16	• 2B17
SAMPLE DEPTH	• GRAB	# TOP	MIDDLE	BOTTOM	# GRAB	• GRAB	4 GRAB	• GRAB	• GRAB	• GRAB
SAMPLE DATE	+ B/12/87	* 8/12/87	8/12/87		• 8/12/87		 8/12/87 	• 8/12/87	• 8/12/87	+ 8/12/87
******************	*******	*********	**********	*********	*********	**********	*********	**********	*********	********
PARAMETERS	•									
***************************************	100									
INORGANICS:	•									
Arsenic	29. 0	30. 0	7.3	1.2	29. 0	14.0	16.0	11.0	28. 0	29.0
Cadmium	11.0	5.3	1.0	ND:	22.0	10.0	11.0	9. 4	10.0	9.1
Chromium	29. 0	43. €	12. 0	11.0	22. 0	31.0	31.0	29. 0	29.0	24.0
Copper	110.0	370.8	58. 0	3.3	100.0	180.0	160.0	140. 0	150. 6	120.0
Lead .	200.0	280.0	51.0	8.4	220.0	180. 0	188. 0	148. 0	140.0	120.0
Zinc	370.0	230.0	49. 0	1.2	220.0	560.0	438.0	460.0	410.0	488. 8
BASE/NEUTRAL ORGANICS:										
Bis (2-Ethylhexyl) phthalate	NO.	MQ	NA	MA	48. 0	NA	MA ,	116.0	990. 8	128.9
EP TOXICITY COMPOUNDS:	•	NA	NA	MA	NA	MA	NA	NA	MA	MA

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

DNLY THE BASE/NEUTRAL RESULT IS REPORTED.



[&]quot;NO" - NOT DETECTED; SINCE DETECTION LINITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NA" - NOT ANALYZED.

[&]quot;" DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLOROTOLUENE WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE ORBANIC FRACTIONS,

TABLE IBB SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - WET WEIGHT AREA B - MIDDLE LAKE NUODEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	+ 29 1	1	•	1185		٠	2012	٠	2B13	•	2814	•	2815	•	2916	٠	2B17
SAMPLE DEPTH	• 6 1 A	9 .	• T00	MIDDLE	BOTTOM	•	GRAR	٠	GRAB	٠	GRAB	€.	GRAB	•	GRAB		GRAB
SAMPLE DATE	8/12	/87	8/12/87	8/12/87	8/12/87	•	8/12/87	٠	8/12/87	•	8/12/87	•	8/12/87	٠	8/12/87	٠	8/12/87
*******************	* * * * * * * * * * * * * * * * * * * *	144 68	******	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	******	***	*******	***	*******	***	*******	****	******	***	****	****	*******
PA RAMETERS	•																
***************************************	**																
INDRGANICS:					•												
Ansenic	3	.5	6. 3	5. 9	NĎ		3.8		1.7		2.4		1.9		4.9		6.4
i.acatam	:	. 3	1.1	Q. 7	CM		2.8		1.2		1.7		1.6		1.8		2.0
Chi carrien	3.	. 5	9. 0	8.1	3.4		2-8		3.7		4.7		5. 0		4.9		5. 4
Dipper	12	.6	77.0	40.0	2.8		13.6		21.3		24.6		23.4		25.6		27.2
LEAC	23	.7	58. 0	35. 0	7.1		28. 0		22.2		26.7		24. 0		23.4		26.7
7.6.	44	. P	47.0	33.0	1.0		28.4		66.6		64.9		78. 8		76. 0	,	87. 0
TACE/NEUTRAL ORGANICS:																	
Bis (2-Ethylhexyl) phthalat			MA .	NA .	NA		6.2		MA		NA		19.7		168. 6		26.4
DIS VE-CONTINENTY PROBLEM	- 141		- 187 -				U+ C				101						20. 4
EF TOXICITY COMPOUNDS:			. NE	NC.	No.		MP.		MA		10 .		MA		MA		NO.

ONLY PARAMETERS DETECTED IN AT LEAST DNE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

NO" - NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

"NA" - NOT ANALYZED.

"" DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHIDAGTOLUSINE WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE ORGANIC FRACTIONS, ONLY THE BASE/NEUTRAL RESULT IS REPORTED.



TAR.E 194

SUMMARY OF SECTIVENT SOMELE DROLYTICOL TILLIFE DRY VERSUT AREA B - ARREVANTS FOAL

NUCDEX INC. - FERDS. NEW JERSEY

*******************	*******	*****	********	****	********	.	**********	••••	********	****	******	****	*******	****	*******	• • • • •	******	••••	*******	***	*********	******	*****	*******	
SAMPLE POINT	• 2B1	_	2919	٠		2B:9	-	٠	385 4	•	FP2:	٠	2 92 2	٠	2923	•	2 8 83	٠	3964	•	3332	5B 56	•	2927	
SAMPLE DEPTH	• 579	_	GRAD	•	TOP	MIDDLE	9 00∻	•	69AF	٠	Gabá	٠		•	3446	•	POTTON	•	Grab '	•	SRAB .	GRAF	•	3378	
SAMPLE DATE	• 8/12	/87 •	8/12/87	7 •	8/12/87	8/12/87	8/12/87	٠	8/12/87	•	8/12/67	•	8/:2/67	٠	9/::'2"	•	B/::/E7	٠	8/12/87	٠	8112187 ·	8/12/6	7 .	E'12/ 9 7	
********************	******	*****	mana se ini	Mare 4	(100 1111111111111111111111111111111111	*******	••••	****	*****	****	• • • • • • • • • •	****	********	***	******	****	********	• • • •	*******	***	********	******	****	** ** * * * * *	
PARAMETERS	•		. :	i	-							•													
*********************	***																								
INDREPNICS:				¥																					(
		_																							,,
Arsenic	72		59. ♦		79. 0	ND.	NO.		34. 2		41.0		164.1		82. @		14		53. e		.55. 5	54,		72.2	
Cadas va	18		-19.0		24.0	4 0	ND.		19.0		13.0		24.0		13.0		MD		21.0		6.2	16.		19, 9	•
Chronium	520		1296. 0		3800.0	8. 9	3. 4		478.8		250.2	•	512.0		26 8. P		NQ		24 PP. 2		470.0	?78.		:500.2	
Copper	500		490.0		650.0	11.0	:.3		170. 0		170.2		330.0		330. 2		粹		610.0		:70. P	.935		45 0. 0	
Lead	1700		2000.0		1400.0	12. 0	5.4		820.0		920.9		2100.0		1100. 2		40		1400.2		1400.0	1222.		1972.7	
line	1000	. 6	1500.0		3600.0	17.0	7.8		548. 0		519.8		998. 0		1200. 0		NO.		24 00.0		: 200. B	9:8.	3	3.592	
VOLATILE DREANICS:					,								•												
Chlorobenzene	MA		NA		MA	NA	17.€		N9		NA.		W		59		10		49		VA	12		¥2	
BRSE/MEUTRAL ORGANICS:																						-			
Bis (2-Ethylhexyl)phthalate	. 140		MA		160	NA	390. €		M		NA		NA		MA		38.6		14		V3	1,3		•,2	
Di-n-Butylphthalate	. NA		NA		MA	· NG	20.0		AA.		NA		MA		NA -		55.8		*4		NO.	10		12	
1,4-Dichlorobenzene	NA		MA		MA	MR	56.0		vA		NA		MA		NA		3/		. , ¢¢		<u>\2</u>	.3		1	
BASE/NEUTRAL PRIORITY																									
POLLUTANT TOTAL	MA		MA		HA	MA	466.0		42		NA		167		MA		6 5. ?		ND.		Ab	WA		/ 2	
BASE/NEUTRAL																									,
LIBRARY SEARCH:												٠.													
Chlorotoluene	NA		MA		160	NET	12.0		WA.		- 40		NA.		YA .		ND		*9		40	40		70	
			*																					10	
EP TOXICITY COMPOUNDS:	NA		•		NA	NA	MA		NR		MA		NA		MP		NA NA		70		NO.	40		A.	

ONLY PARAMETERS DETECTED IN AT LEAST DIE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).



[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE AMALYTICAL DATA SHEETS PROVIDED IN AFFENDIX B.

[&]quot;NA" - NOT ANALYZED.

[&]quot;" DENOTES CONCENTRATION LESS THAN EPA MAXIMUM LEACHATE CONCENTRATION.

WHERE CHLOROTOLUENE WAS DETECTED IN BOTH THE BASE MEUTRAL AND VOLATILE DREAMIC FRACTIONS,

ONLY THE BASE/NEUTRAL RESULT IS REPORTED.

TARLE 198

SUMMARY OF SEDIMENT SAMPLE ANALYTICAL RESULTS - MET MEIGHT... RREA B - HARTMANNS POND

NUODEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	2918	+ 29	9 4	1	2 B 19		+ 2B2 0	2821		5855	21	B23 ·	· 2823	2824	SBS	5 +	2826	2B27	● WS-1
SAMPLE DEPTH (SRAD	+ 6R		TOP -	MIDDLE	BOTTOM	• GRAB	• GRAS	•	GRAP	• 5i	RAB	• BOTTOM	• GRAB	• GRA		GRAB	4 GRAB	POND MATE
SAMPLE BATE (8/12/87	+ 8/1	2/87	8/12/87	8/12/87	8/12/87	. 8/12/87	7 + 8/12/	67 +	8/12/87	. 8/	12/87	8/12/87	8/:2/8	7 . 8/12	/87 •	8/12/87	• 8/12/8	7 . 8/12/87
	******	*****	*****	****	*******	******	********	********	*****	******	******	*****	*********	*********	********	*****	*******	********	*******
Principle ters)																		
***************************************	•															,			
INDREANICS:										• .									
H	#0			164	161	701	101	. 84		NA		No.	701	461	N		NA	MA	64
Arsenic	11.6		1.8	8.7	ND.	NO	, 6.7	11.	5	11.5	•	16.4	NA	8. 2	13	3.1	9.2	10, 1	ND
Cadai w	2.9		2. 8	2.6	NO	10	3.8	3.		2.7		2.6	MA	2.8		8.0	3. 0	2. 3	
Chronium	84.0	17		421.0	6.5	2.8	95. 8	70.		56.0	` ;	51.8	NA	315.0	61	. 0	47.0	218.0) ''
Copper	80. 0	7	.0	71.2	2.2	1.1	33. €	48.		36. 0	(66. 8	NA '	79.€	20	2.1	45.0	63, (NO NO
Load	273.0	30	l. 0	136.0	8.7	4.4	163. 0	259.		-236.0	5	12.€	NA	188. 9	18:	. 0	199.0	253.0	MD
line	160.0	22		480.0	12.4	6.4	109. 0	144.		109. 8	2:	31. 0	NA	389. 8	131	D. E	155. 0	218.0	NO.
VOLATILE ORGANICS:								. •											
Ch 1 or obernzene	NA	N)	MA	. 10	13.9	MA	NA		MA	(NA	ND	NA.	N	•	'NA	NA	NO
BRSE/NEUTRAL DREAMICS:					,	!													
Dis (2-Ethylhexyl)phthalate	NR	M	,	NA .	MA	320.0	- NA	NA		MA	1	NA	8.7	*9	NE		NA	VA	ND
Di-n-Butylphthalate	NG	M)	.MA	140	7 16.4	MA	MA		MA	1	NA:	16.0	NA	NS		NA	NA	ND
1,4-Dichlorobenzene	140	N	1	NA	NA	46.8	MA	NA		MA	1	NA	ND	NA	NS		4 0	440	40
BREE/MEUTRAL PRIDRITY											-								
POLLUTANT TOTAL:	, NA	N)	NA	NA .	372.4	MA	MA		MA	١	MA	24.7	NA	¥	ı	NA	NA	740
BASE/NEUTRAL Library Search:																			r
ribmus oftersi																			4
iotal Chlorotoluene Isomers	NA ·	N)	NA ·	140	9.3	MA	NA		MA		NA	ND	48	N		NA	NA	T.
															,				

CHLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ONLY THE BASE/NEUTRAL RESULT IS REPORTED.



EP TOXICITY COMPOUNDS:

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

MO" - NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NR" - NOT ANALYZED.

[&]quot;" DENOTES CONCENTRATION LESS THAN EPA MAILMEN LEACHATE CONCENTRATION.

WHERE CHLOROTOLUENE WAS DETECTED IN BOTH THE BASE/NEUTRAL AND VOLATILE DREAMIC FRACTIONS,

TABLE 20

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

AREA D - NON-PRODUCTION AREA

NUODEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	203		204		205	•		2D6		*	207	•	2D8
SAMPLE DEPTH (inches) +	0-4	•	6 -3		0-6	•	0-6		18-24	•	0-3	•	8-6 3-63-03
SAMPLE DATE *	7/27/87	•	7/27/87	*	7/27/87		7/27/87		7/27/67	•	7/27/87	*	7/27/87
PARAMETERS +	*********					****	*****	******	******	****	********	****	• • • • • • • • •
******************		•											
INORGANICS:		,											
Hercury	· NO		ND		MD		0.09		ND		0 . 10		0.20
VOLATILE ORGANICS:													-
Chlorobenzene	NED		ND		0.69		NA		ND		ND		ND
Ethyl benzene .	ND		ND		0.21		NA	-	ND		ND		MD
VOLATILE PRIDRITY								-					
POLLUTANT TOTAL	ND	b	ND		0.98		NA 		Q M		ND	,	ND
BASE/NEUTRAL ORGANICS:													
Anthracene	ND		NĐ		64. 0		ND		NA		ND		ND
Bis (2-Ethylhexyl) phthalat	e 350.0		8.0		ND		ND		NA	•	210.0		42.8
Chrysene	ND		ND		45. 8		ND ·		NA		ND		ND
1,2-Dichlorobenzene	ND		4.0		ND	,	ND		NA		3.0		ND
1, 3-Dichlorobenzene	· ND		2.0		ND		ND		NA		ND		ND
1,4-Dichlorobenzene	ND		2.0		ND		ND -		NA		ND		ND
Diethylphthalate	ND		ND		ND		ND		NA		4.0		ND
Di-n-Octylphthalate	ND		ND		ND		ND		NA		5.0		ND
Pyrene	ND		ND		89. 9		ND		NA		ND		ND
1,2,4-Trichlorobenzene	ND		18.0		ND		ND		NA		2.0		ND
BASE/NEUTRAL PRIDRITY								-					
POLLUTANT TOTAL	350.0		34.0		189.0		ND		NA		224. 8		42.0

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).



[&]quot;ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

MAN - NOT AND VICE

TABLE 21 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA F - GENERAL PLANT PRODUCTION AREA NUODEX INC. - FORDS, NEW JERSEY

*****	*******	******	********
SAMPLE POINT * SAMPLE DEPTH (inches)* SAMPLE DATE *	2F1 18-24 9/15/87	2F3 18-24 9/15/87	54-60 9/15/87
**************************************	***	****	****
INDRGANICS:			
Total Phenols	Ø. 3Ø	1.3	ø . 93
VOLATILE ORGANICS:			
Chloroform	ø. ø6	ଡ. ଡ୍ରେ	0.15
Tetrachloroethylene	ND	0.07	0.03
VOLATILE PRIORITY . POLLUTANT TOTAL	0.06	Ø. 13	Ø. 18
VOLATILE ORGANICS LIBRARY SEARCH:			
Total Xylene Isomers	ND	0.34	ND
BASE/NEUTRAL ORGANICS:			
BASE/NEUTRAL LIBRARY SEARCH:			
Chlorotoluene	7.6	ND	4.7

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (DOM).

"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 22 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA G-GENERAL PLANT PRODUCTION AREA NUODEX INC. - FORDS, NEW JERSEY

SAKPLE POINT	•		261		•		565		263		264	•	26511	•	11685
SAMPLE DEPTH (inches)	•	18-24		42-48	•	18-24	. 24-	30 +	6-12	•	12-18		18-24	٠	18-24
SAMPLE DATE	•	9/4/87		9/4/87	•	9/4/87	9/4/	37 +	9/4/87	•	9/4/87	•	9/14/87	•	9/14/87
PARAMETERS	****	*******	******	*******	*****	********	**********	*****	*********	*****	********	*****	*******	****	*******
H4440440444444444444	***		, ,							į					
INORGANICS:											,				-
Arsenic		NA -		NA		NA	NA		15		30		3.4		1.6
Chromium		MA		NA		NA	NA		11		9.8		9.8		13
Copper		NÁ		NA		NA	· NA		9.5		36		6.4		11
Lead		NA		NA '		NA	NA		6.0		9. 4		5. 4		8.2
Petroleus Hydrocarbons		NA		NA		NA	· NA		ND		26		10000		189
Zinc		NA		NA _.		NA	NA		35		31		38		96
BASE/NEUTRAL ORGANICS:															
Hexachlorobenzene		ND		MD		2,6	, ND		ND		ΦA		ND		NO
1,2,4-Trichlorobenzene		ND		ND		1.2	ND		ND		ND		ND		ND
BASE/NEUTRAL .IBRARY SEARCH:												•			-
Thiorotoluene		ND		ND		2677	338		ND		ND		ND		ND

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER WILLION (pom).
"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX 8.
"NA" - NOT ANALYZED.

TABLE 23
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
AREA I - MALEIC PRODUCTION AREA
MUDDEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	•	211		•	515	•		213	•	2	14	•	215	•	516
SAMPLE DEPTH (inches)	• 18-24		14-51	18-24	48-	54 +	18-24	42-4		18-24	42-48 .	• 18-24	42-48	. 10-24	30-36
SAMPLE DATE	* 9/4/	7	9/4/87	• 9/4/87	9/4	/87 +	9/4/87	9/4/	87 4	9/22/87	9/22/87	• 9/4/87	9/4/87	9/14/87	9/14/87
****************	*******	********	******	********	*********	******	**********	********	*******	******	*****	*********	********	************	***********
PARAMETERS	•		a												
****************	***		- '.												
VOLATILE ORGANICS:															-
Benzene	٠.	9 9	109.0	10		D	9.05	NO		NO	H0	ND	NO	MD	ND
Chlorobenzene	ND		NO	NO		D	0.98		. 14	ND	MD	ND	· ND	MD	ND
Chlorofors	ND		ND	10		0	ND	MO		MD	MD	0.5	1 10	ND	HD
Ethy I benzene	NO.		7.7	MD		D	0.06	NO		50. 4	39. 8	706.0	0.06	54.0	84. 8
Toluene	MD		10	NG		10	0.35			MD	ND	0.9	5 10	NO	NED
WLATILE PRIORITY															
POLLUTANT TOTAL	0.	99	116.7	KO		Ď	1.44	•	.14	50.4	39.8	707.4	6 9.06	54.0	84. 0
MOLATILE LIBRARY SEARCH:	•												4.		
fylene	8.	27	143	NO		NO	2.36	. 3	. 4	394	300	1160	0.61	480	330
hlorotoleene	•		ND	MD		ND:	4.0		. 3	100	AD.	ND	0.53	ND ND	MD.

DNLY PARAMETERS DETECTED IN AT LEAST DNE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
"NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

di di

TABLE 24 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA J - DISCONTINUED PRODUCTION AREA NUODEX INC. - FORDS, NEW JERSEY

*******************	******	****	*******	****	*******	****	*********	*********	************
SAMPLE POINT +	2J1		575	•	233		2J4	• 2J5	• 2J6
SAMPLE DEPTH (inches) #	54-68	•	54-68	•	54-68		54-60	• 54-60	. TANK BOTTOM
SAMPLE DATE	8/31/87	•	8/31/87		9/2/87	•	8/31/87	 8/31/87 	• 9/8/87
******************	*******	****	********	****	*********	****	*********	**********	*************
PARAMETERS +								-	

INDREANICS:									
Arsenic	ND		2.1		ND		ND	ND	NA.
Chronium	15.0		11.0		4.3		10.0	6.1	NA
Copper	1300. 0		47. 6		3.2		21.0	18. 0	N/A
Lead	34.0		12.0		ND		10.6	44. 0	NA:
Zinc	46. 0		36.0		6.6		84. 0	36.0	NA
VOLATILE ORGANICS:							·		
Toluene	ND		ND		ND		ND	ND	0.34
VOLATILE ORGANICS LIBRARY SEARCH:									
Chlorotoluene .	6. 15		0.03		ND		0.14	ND	NÚ
BASE/NEUTRAL ORGANICS:									
Anthracese	420. 8		31.0		ND		670.0	ND	ND
Bis (2-Ethylhexyl) phthalate	ND		ND		MD		ND	MD	6.0
BASE/NEUTRAL PRIORITY POLLUTANT TOTAL	420.0		31.0		ND		670.0	ND	6.0

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

"NA" - NOT ANALYZED.



TABLE 25 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA K - DRIM STORAGE AREA MUDDEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	2K1	•	2K2		* 2K5	•	2K6			2K7	+ 288 +		9	K9	
SAMPLE DEPTH (inches)		. 0-6	18-24	28-34	4 38-44	0-6	18-24	35-41		18-24	+ 24-30 ·		6-12	18-24	30-36
SIMPLE DATE		• 6/25/87			+ 6/25/87						+ 6/25/87				6/25/87
01015155540146696546454	_							,							
MANNETERS	•			**********										***********	
#####################################	***														
NORSANIC COMPOUNDS:		•							•						
ercury	6. €	10	· MD	ND	NO .	1.5	ND	1.6	2.3	5.2	MD	ND	MA	0. 097	0.07
OLATILE ORGANICS:								,							
lenzene	NR	NA	NB	MD	MD	NA	10	0. 055	- NA	NO	ND	NA	MA	MD	NO
hlorobenzene	MA	MA	0.03	10	10	NA	MD	10	MR	ND	ND	NA	NA	0. 626	0.11
hlorofore	MA	NA	160	NO	10	NA	NO	NO	NA	NO	10	, MA	NA	0.062	0. 16
oluene	MA	MA	8.13	0.054	ND.	NA	NED	MD	160	ND	ND -	NA	MA	0.4B	2.2
,1,1-Trichloroethane	MA	MA	10	NO	ND	MA	ND	ND	MA	ND	ND	NA -	MA	9. 043	ND
OLATILE PRIORITY				/											
POLLUTANT TOTAL	NÁ	MA	0. 16	8.054	ND	NA	HD	0. 055	MA	NO.	MD	MA	MA	0.6 11	2.47
DLATILE OSGANIES														•	
LIBRARY SEARCH:				/											
lylene	160	MA	ND	10	ND	MA	ND	8. 65	M	MD	10	NA	MA	ND	ND
hiorotoluene	NA	MA	4.9	•	Ю	MA	MD	•	MA	MD	MD	MA	- 1981	1.0	3. 6
MSE/MELITRAL ORGANICS:	•														
lexachlorobenz ene	ND	· M0	MA	MO	3.	3	NA	ND	NO	140	HD	ND	ND	MA	NR
BASE NEWTRAL 18AARY SEAACH:															
Morotoluene	ND	7.3	NA	1	5	11	MA	ND	0.5	NA	NO	MD	11	NA	NA
ESTICIDES															
HC-delta	MD	ND	NA	MD	2.4	ND	NA	NO	ND	MA	160	ND	NA	MA	MD
oxaghene	ND	9.6	NA	ND	ND	227	MA	NO	ND	MA	, ND	ND	MA	MA	ND
eptachlor	ND	ND	MA	0.50	ND	MD	NO	MD	MO	MA	ND	ND	NG	MA	MB

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (pom).



[&]quot;ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NO" - NOT ANALYZED.

^{***} DENOTES COMPOUND WAS FOUND IN BOTH THE BASE/MEUTRAL AND VOLATILE DASANIC FRACTIONS:

TABLE 25
SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS
AREA L - TRANSFORMER LOCATION
NUMBER 1NC. - FORDS, NEW JERSEY

******************	******		*****	***	44444		******		******			*****	44 44 44	****	****	*****	******	******	******	******	******	******		*****	*******	*******
SMPLE POINT	•	LTI		•		LT-2	•		11-3	•		17-4		٠		LT-5		•	L?-6		٠	LT-7	,	•		В
STUPLE DEPTH (inches)	9-6		16-3 0	•	8-6	18	-30 +	₽-6	18-30	•	8-6		18-38	٠	9-6		10-30	. 6-6	,	18-30		-6	18-30	. (1-6	3 - 38
STAPLE DATE	•	8/4/87		•		8/4/8 7			8/4/87	•		8/4/87	,	٠		8/4/87	'	•	8/4/8	7	•	8/4/6	7	•	8	37
*****************	*******	******	*****	****	****	*****	*********	*****		****	*** ** *	*****	******	****	*****	******	*******	*******	******	*******	******	*****	*******	*****	*******	******
PARAMETER	-																									

PCD Compounds:	ND		MD		100			100	MA		100		100		MES		ND	N.	١	ND		ND CIN	NÐ		ND.	мΛ

"NO" - NOT BÉTECTED; SINCE BETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 27
SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS
AREA L - DISCONTINUED PRODUCTION AREA
NUODEX INC. - FORDS, NEW JERSEY

SAMPLE POINT	• a1	• 21.2	• 2L3	• 2L4	• 2L5	•	21.6	• 21	L7	• 2L8	21.9	. SF18	• 2L11	+ 2L12	• 2L13	• 2L14	• 2L15	• SL16	# 2L17
SAMPLE DEPTH (inches)	• 54-60	+ 54-68	s 54-60					± 18-24				# 36-42						-	
SAMPLE DATE		-				• 9/1/87	• 9/1/87	• 9/2/87	9/2/87	• 9/2/87	• 9/2/87	• 9/:/87							
PARCHETERS	*********	*******	*******	*******	******	*******	•••••	********	•••••		*******	,,,,,,,,,,	*******	********	*******	******		********	*******

INORGANICS:																			
Arsenic	450.0	240.8	300. 0	1.3	2.1	NA	5. 8	VA	3.2	NO	7.5	NA	4 0	NA	NA.	NA.	NA	NA	NA
Cadmium	MD	0.4	2.2	ND	ND -	NA	ND	NO	ND	ND	- 25	NA	NA.	NA	NA	NA	NA	NA	NA .
Chronium .	150.0	130.0	160. 0	6.3	9.7	NAC	6.7	NA.	8.6	3.2	6.6	16	NA	49	NA	NA	NA	Na	NA.
Copper	350.0	300.0	440.0	4.5	9.0	NA	31.0	NA	26.0	25.0	8. 7	NG.	NA	NA	NA	NA	NA	NA	NA
Lead .	348.0	280.0	300.0	6.6	179.3	MA	63. 8	140	130.€	898.8	16. 0	12	NA	NA	NA	NA	MA	NA	NA
Selanium	5.1	3.7	4.7	MD	MD	369	хĐ	NA.	NA.	NA	NA	XB	NA	NA.	NA	NA	NA	NA	NA.
Zinc	210.0	220.0	570.0	5.7	2.7	NA	64. #	34	46.0	:6.0	13.0	¥	NA.	\A	5A	NA.	NA	NA	KA
VOLATILE ORGANICS:			,																
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	0.23	0.69	ND	-ND	NA	NA	NA.	NA	NA.	KA	NA.	NA.
Chlorotoluene	MA	MA	MA	MA	MA	149	:MA	NQ.	NA	MA	NO.	MA	NA	NA	KD.	ND	ND	ND	ND
Ethylbenzene	40	ND	ND	ND	0. 29	10	ND .	0.52	0.64	8.12	NO	MAG	NA.	MB.	VQ	٧A	NA	NA	1/9
Tetrachlorouthylene	ND	· ND	ND	ND	0.13	ND	ND	KD	XD	ND	ND	MA	NA.	Æ	NA	MA	MA	MA	NA
Toluene	ND	ND	ND	ND	0. 15	ND	ND.	0.33	0.06	0.63	MD	MA	NA	12	NA.	Ná	43	**	· va
Trichloroethylene	MD	₩D	MD	· ND	МĐ	ND	MD	ND	ND.	P. 26	830.0	NA .	, NA	λĒ	\A 	NA	1 4	NF.	NA
VOLATILE PRIORITY																,			
POLLUTANT TOTAL	NĐ	ND	ND	NO	0.36	ND	ND	:.:8	0.17	2,47	830. 8	NA	#A	NA	NA	74	54	NC -	NA.
VOLATILE ORGANICS LIBRARY SEARCH:							,												-
Nulsens.	MA	N.D.	ND	ND	9.8	ND	ND	2.8	8.71	3.51	ND	::0	*9	VC	% 2	\2	13	N 2	16
Xylene	MD 5/D	ND D	ND	ND		ND	ND.	₽.7			•	A.E	3.0	N/D	12	3.5	56	10	
Chlorotoluene	30	MD.	NU	n.C	•	NU.	r.	•• /	-	•	•	15		****		144			•

TABLE 27 (cont.) SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS AREA L - DISCONTINUED PRODUCTION AREA NUODEX INC. - FORDS, NEW JERSEY

	*******	******	*******	******	********	*****	*******	******	********	******	*******	********					*******		
SAMPLE POINT	* a.i	+ STS							2L7	* 2L8	+ 2L9	• 2L10	• a.11	• SF15	• a.13	• 2L14	• EL15	• SL16	 al.17
SAMPLE DEPTH (inches)		+ 54-60						+ 18-24	48-54	# 54-68	# 36-42	1 36-42	36-42	• 36-42	* 36-42	* 30-36	* 36-42	+ 18-24	1 36-42
SAIPLE DATE	* 3/1/6/	+ 3/1/6/	1 WUW	* 9/1/6/	* 9/1/8/	9/1/8/	• 9/1/87	* 9/2/8/	9/2/87	* 9/2/87	* 9/2/8/	4 9/1/87	* 9/1/87	• 9/1/87	• 9/1/87	4 9/1/87	* 9/1/87	• 9/1/87	* 9/1/87
PARMETERS	**********	*********	********	******	********	******	********	*******	•••••	********	*******	********	*******	********	*******	*******	********	*******	
*********			,																
BASE/NELITRAL ORGANICS:																			
Benzo (b) fluoranthene	NO	NO	ND	160	1.0	MA	ND	NA	NO	ND	ND	NG.	NA	NA	NA	NA	NA	MG	NA
Benzo (k) /luoranthene	ND	MD	ND	10	1.0	MA	'NO	MA	ND	NĎ	ND	NA	NA	NA	NA	NA	NA.	MA	NA.
Bis (2-Ethylhenyl) phthalate	4.8	3.0	84. 0	2.0	2.0	MA	NO	MA	JØ -	ND	NED	MA:	N/A	NA	N9	NA	N/A	NA	NA
Dirysone	ND	. ND	ND .	NO	2.0	MA	NO	NA	MD	ND	MD	NA	NA						
Di-n-Butylphthalate	XO	ND	2.0	HO	ND	NA	ND	NA	ND	ND	ND	MA	NA	449	NR	NA	NA	NA	NA
Fluoranthene	ND	ND:	1.0	ND:	3.0	NA	ND	NA	· ND	ND	MD	MA	NA	NA	MA	NA	NA,	MA	NA
Hexach]orobenzene	ND	ND	MD	NO	2.0	MA	ND	NA	ND)	ND	ND	MA	NA	NA	NA.	NA	NΑ	NR	NA
Phenanthrene	MD	ND	ND	ND	1.0	NA	ND	NA	MD	MD	KD	MA	NA	NA	NA .	NA	NA	MA	NA
Pyrene	1.8	ND	2.0	MD	. 2.●	NO	· ND	NO	MD.	NĐ	MD	NA.	NG)	NA	N/A	NA	MA	NA	NG
1,2,4-Trichlorobenzene	ND	ND	10	ND	3.0	MA	ND	NA	MD	MD	ND	MA	MA	MA	NA	NA	NA	NA	MA
DAGE/NEUTRAL PRIDRITY																			
POLLUTANT TOTAL	5.0	3. 0	83. 0	2.0	17.0	MA	ND	NA	NO	ND	NO	MA	NA	MA	NA	NA	NA	NA.	*9
BAGE/NEUTRAL Library Search:											٠								
Chlorotolume	MO	NO	MD	ND	148	МА	ND	NA	5	15	71	MA	MA	· NA	MA	NA	. NA	NÁ	NA -
PESTICIDES:									,										
., 4' -80T	MD	М	NO	ND	10	NG	MD	NA	ND .	9.6	ND	MA	MA	NA	NA	NA	NA	NA.	NA
Strobane	MA	MA	MA	KA	NA.	MA	NA	NA	MA	NA	NA	17,600	64,600	13.8	MA	NA	MA	MQ	NA
Toxaphene	MD	MD	. 40	ND	1150	MA	ND	MA	MD	ND	ND	NA	NA	NA	MA	NA	14	, # 1	NA
TOTAL SAMPLE CONCENTRATION	ND	ND.	MD	ND	:159	90	ND	NO	ND	9.6	ND	17,500	64.888	13.0	NA	NA	NA	NA	1.9

ONLY PARAMETERS DETECTED IN AT LEAST DIE SAMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LIMITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN AFPENDIX B.

[&]quot;MA" - NOT ANALYZED.

[&]quot;" - MERE DILDODILLENE WAS RETECTED IN BOTH THE BASE/NEUTRAL AND VO. ATTLE ORGANIC FRACTIONS, ONLY THE BASE/NEUTRAL RESULT IS REPORTED.

TABLE 28 JAMARY OF SOIL SAMPLE ANALYTICAL RESULTS AREA M COMPOSITE SAMPLES - PRIORITY POLLUTANTS MUCDEX INC. - FORDS, NEW JERSEY

SAMPLE POINT #	2M-7, 18, 6 comp.	# 2M-4,5,1 comp.	 2M-12, 2, 11 comp. 	* 2M-8,9,3 comp.
SAMPLE DATE	6/26/87	4 6/26/87	+ 5/26/87	5/26/87
+++++++++++++++++++++++++++++++++++++++	*************	*********	*********	***********
PARAMETERS +			,	<i>t</i> .

INDREANICS:				
Petroleum Hydrocarbons	1908	78	179	170.0
Cyanide	5.5	ND	ND	ND
Phenois	8.2	2.7	11	9.7
Antimony	D	19	21	7.2
Arsenic	51	78	110	98. 2
Beryllium	9. 71	9.98	5.5	1.2
Cadwius	3. 2	56	11	5.7
Chromium	71	139	200	120.0
Cooper	130	288	568	300.0
Lead	99	288	359	240.0
Hercury	1.6	2.9	2.3	2.9
Vickel	15	17	26	17.0
Selenium	3.4	4.3	9, 1	7.4
Silver	1.7	2.6	3.8	2.9
Thallium	ND	ND	ND	3.3
line	98	110	360	138.8
VOLATILE ORGANICS:				
Benzene	8. 882	NO.	e. 26	NO
Chlorobenzene	8, 26	9. 966	1.1	· ND
Ethylbenzene	8. 42	8. 654	8. 94	ND -
Tetrachloroethylene	8. 848	ND .	8. 8 62	ND
Toluene	6. 9	0.36	9.4	4.7
VOLATILE PRIDRITY				
POLLUTANT TOTAL	7.792	2. 48	11.762	4.7
VOLATILE LIBRARY				
SEARCH:				
Xylene	1.48	8. 56	1.63	12.2
BASE/NEUTRAL ORGANICS:	· .			
Bis(2-ethylhexyl) Phthalat	se 9	ND	NT)	ND
1,4-Dichlorobenzene	1	ND	. ND	ND
Fluoranthene	5	· NO	MD	MD
BASE/NEUTRAL PRIORITY		*******		
POLLUTANT TOTAL	12	NO	ND	ND .
BASE/NEUTRAL LIBRARY SEARCH:				

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (Dpm).

- 4K

 $= \{\{\{x_i\}_{i=1}^{p^{(n)}}\}$

[&]quot;ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX 8.

TABLE 29 SUMMARY OF SOIL SAMPLE AMALYTICAL RESULTS AREA M - DISCREET SAMPLES NUODEX INC. - FORDS, NEW JERSEY

***************************************	**********	***********	*******	********	*******	*******	*******	*******	***	*******	******	************	****	*******	*******
SAMPLE POINT	• 2N13	•	2H14	•		2015		•	5	116	•	2M17		21	M18
SAMPLE DEPTH (inches)	• 6-12			•	6-12		-	•	6-12		+ 6-12			6-12	24-30
SAMPLE DATE	• 6/29/87	• 6.	/29/87	•	6/29/87		6/29/87	•	6/29/87	6/29/87	• 6/29/	87 6/29/8	7 •	6/29/87	6/29/87
***********************	*********	*******	********	*********	*******	*********	********	*******	********	********	*******	********	****	*******	*********
PARAMETERS	•														
INORGANICS:					4										
Petroleum Hydrocarbons	100	7	7		470		220		590	150	184	130		158	75
Antimony	11	· N	D		4.8		ND		8.6	14	15	24		9.2	ND
Arsenic	150	13	•		160		71		179	92	- 120	91		120	64
Beryllium	1.6		1.5		1.8		2.1		2.3	1.7	1.		3 ·	1.7	1.€
Cadmius	8.0		7.8		9. 1		. 16		10	8.2	9.	_	4	8.3	6.2
Dirogius	180	15			178		92		250	120	170	150		150	120
Copper	310	33	-		360		810		510	410	410	270		370	250
Lead	390	36			348		630		400	428	320	320	_	290	260
Mercury	4.2		3. 4		3.4		3.2		3.6	5.0	. 3.	_		3.3	2.8
Nickel	21	а			20		71		24	55	35			32	27
Selenium	8. i		6. 0		13		7.4		13	5.4	- 6.	_		12	6.8
Silver	2.9		1.8		2.4		0.98		3.0	2.1	1.		3	5.1	1.6
Thallium	NO				MD .		NO TOTAL		10	HD, 880	MD	100		ND 370	ND 150
line	- 94	9	•		140				180		410	130		3/0	1.50
VOLATILE ORGANICS:											,		,		
Chloroform	MD	(D. 94 0		ND		MD		10	10	MD	ND		MD	ND
BASE/NEUTRAL ORGANICS:															
Bis(2-ethylhenyl) Phthala	te MD		•		HD '		MO ,		ND	Ю	MD	ND		ND	1
BRSE/NEUTRAL LIBRARY GEARCH:		•													
Chlorotolsene	ND		10	1	11.9		18.2		18. ●	60. €	3.9	2.3	1	ND	4.2

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOUL ABOVE.



ALL CONCENTRATIONS ARE IN PARTS PER HILLION (pow).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LINITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 30 SUMMARY OF SDIL SAMPLES AMALYTICAL RESULTS AREA O - SLUGGE DISPOSAL AREA MUDDEX INC. - FORDS, NEW JERSEY

	******	*******		********																				
OFFLE POINT .	201	. 2	05	20	13 +	20		205	2	96 9	20	D7 +	208	209	2	016	2011	2	012	20		20:4 ×		
	0-6	• •-6	39-36	8-6	42-48 *	€ -6	36-42 +	●6 ●	P-6	30-36	9-6	18-24	8-6 •	9-6	1-6	6-12	8-6 4	3-6	5-12	• 0-6	6-12 •	8-5		
	9/11/87	9/11/87	9/11/874	9/11/87	9/11/874	9/11/87	9/11/87+	9/10/874	9/11/87	9/11/87=	9/10/87	9/10/87+	9/10/87+	9/11/87	9/10/87	9/10/87	9/19/87+	9/11/87	9/11/87	9/10/87				
**********	****		********	******	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 	10444 144	******	******	******	*******	******	*******	******	******	******	*******	*******	*******	*******	********	******	*******	*****	
NAMETERS																								
*******										٠.														4
CORGANICS:																							1	
						-																	(~	1
senic	180	160	240	460	320	110	250 -	12	5.4	448	1.8	4.0	1.9	110	KD	16	16	229	77	16	3.3	2.8	40	,.gr
drive	2.0	1.5	2.7	14	ND -	NO.	1.0	0.3	MD	MD	6.2	1.9	MD	NO.	MD '	1.2	0.7	MD	ND	1.2	ND	ND	KD	
	160	160	229	500	140	87	160	74	89	15	8.0	37	MD	39	6.7	74	24	150	38	34	3.7	8. 4	7.7	
	690	440	610	990	290	160	468	120	180	600	52	82	3. 6	200	14	220	170	620	260	100	14	13	11	
	450	100	Xe	910	326	140	300	179	270	13	4.5	150	4. 0	160	12	2100	230	378	140	97	11	8.3	10	
loni w	1.4	1.3	4.6	4.1	4.6	0.8	4.7	NO.	NO	5.1	MD	ND	MD .	2.9	MD	~	ND	6.3	ND	0.7	MĎ	MD	ND .	
ine ·	340	460	740	360	140	95	290	220	398	27	85	34	7. 0	64	9.4	1200	1800	240	94	150	19	26	9. 3	
1							j																	
GE/NEUTANL ONGOLICS:							. 1																	
mzo (a) anthracene	MA	MA	NA	NA.	MA	NR	MA	MA	MA	160	ND	NA	MD	MA	ND	NA	8. 59	MA	NA	MA	MR	44	MA	
nzo (a) p yrana	MA	NA ·	160	MQ	100	MA	160	MA	100	MA	ND	NA	MD	MA	ND	NA	0.61	MR	MA	MA	MA	MA	MR	
mzo (b) fluorantheme	160	MA	MA	NA.	MA	NO.	NA	MA	MR	MA	MD	NA.	MD	MR	ND:	NA	0.56	MA	NA	NA	MR	MA	MA	
s (2-Ethylhewyl)phthalate	#A	HA	MA	MA	MA	NG.	MA	MA	MA	MA	1.1	MA	MD	MA	ND	MA	2.4	MA	MA	MA	MA	140	MA	
TYSORE	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	10	160	ND	MA .	KD	NA	0.62	MA	N/A	NA	MA	NG.	NA	
uorantheme	MA	MA	NA	MA	NA)	MA	MA	140	MA	MA	MD	MA		HA.	MD	NA NA	1.6	NG NG	NA NA	NG NG	MA	MA	NA NA	
enenthrene	167	NA NA	167	MA	NA NA	160	MA	NG	MA	MA	100	NA NA	100 100	NA NA	ND ND	NA NA	0.74 1.2	MR MG	NA NA	NA NA	NG NG	14A) 14A)	NA NA	
rene	NA	MA	NA .	NA	149	NA .	MA	MA	, NA	MA	MD	164		TB1 .			1.6							
SE/NEUTRAL PRIDRITY																								
POLLUTANT TOTAL	NQ.	NA	MA	MA	NA	NG	N/A	NA	NA	MA	1.1	MA	ND	NA	ND	NA	8.32	NA	NA	MA	NA	NA "	NA (
																							14	*#**
RSE/NEUTRAL																								
MARY SEARCHE																•								
							***	NO.		**		MO	0.34	NO	MD.	NO	40	NO.	MO	840	MG	NO.	MO	
iorotoluene	NA	MFI	(67	#1	PR1	pper	PRI I	PR1	781	PER	N.	mari .	V. 34	MAN .	ΝŲ	1991	. "	747		· ·		100		

ONLY PARAMETERS BETECTED IN AT LEAST ONE SOMPLE ARE SHOWN ABOVE.

ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).

[&]quot;NO" - NOT DETECTED; SINCE DETECTION LINITS WARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

[&]quot;NA" - NOT ANALYZED.

TABLE 31
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
AREA 0 - NON-VEGETATIVE GROWTH AREA
NUODEX INC. - FORDS, NEW JERSEY

***************	****	*********	****	*******	****	******	****	*******	****	********
SAMPLE POINT		201	•	202		203		204		205
SAMPLE DEPTH (inches)	•	36-42		36-42		36-42		0-6	•	36-42
SAMPLE DATE	•	8/31/87		8/31/87	•	8/31/87		9/2/87	•	9/2/87
*************	****	*******	****	*******	****	******	****	*******	****	*******
PARAMETERS	•				·					
**************	****						•			
INORGANICS:										
Arsenic		250.0		210.0		289.0		74.0		85. J
Cadmium		0.46		ND		3.0		9.3		18.0
Chromium		99. 6		83. 0		190.0		119.0		22 0. 0
Copper		350.0		260.0		590.0		560.0		320.0
Lead		320. €		290.0		330.0		28 0. 0		390.0
Zinc		148.0		120.0		250.8		369.0		648.8

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY,
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 12 SUMMARY OF SOIL SOMPLE ONALYTICAL RESULTS AREA R - MARSHLANDS MUDDEX INC. - FORDS, NEW JERSEY

THE REPORT OF THE PARTY OF THE

***********		*********	***********) 	*********		**********	************	**********	**********		**********	**********		**********
SAMPLE POINT	. • 5k1 •	2R2	4 2R3 4	. 2	R4	• 2R5	•	296 +	287	2R84	2R9 +	. 2	R10 =	2R11 +	2812
SAMPLE DEPTH (unches)	• 3-6 •	9 -6	1 9-6 1	1-6	39-36	• 8-6	• 0-6	30-36 ♦	9-6	. 9-6	• 0-6 •	4-6	24-39	0-6	9-6
SAMPLE DATE	• 9/19/87 •	9/10/87	9/10/87	9/10/87	9/19/87	9/18/87	9/10/87	9/10/87 +	9/14/87	 9/14/87 	9/14/87 +	9/14/87	9/14/87 *	9/14/87	9/11/87
*************	***************	**********	***********	**********	*********	*********	***********		**********	**********		*********	**********	/***********	**********
PARAMETERS	•	-													
***************	*******														
INDAGANICS:															
Arsenic	106	28	170	5.9	29	34	14	2.6	148	180	148	7.0	8.4	160	159
Cadesus	NE	NO	100	ê. 58	0.71	NO	- ND	ND.	0.7	0.4	0.9	NC	ND	1.0	ND s
Chromium	S 2	20	116	11	44	23	12	NO NO	150	128	150	9.6	10	128	148
Copper	728	72	386	100	- 280	120	39	54	340	276	400	20	19	438	350 /**
Lead	160	53	290	120	270	100	22	1.9	340	250	380	14	14	320	298
Zinc	220	66	148	2:0	268	ผ	86	24	148	120	150	39	. 32	168	136 😁

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
"NO" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

TABLE 33 SUMMARY OF SLUDGE SAMPLE ANALYTICAL RESULTS AREA ST - SEPTIC TANKS NUODEX INC. - FORDS. NEW JERSEY

	*****	****
SAMPLE POINT *	TANK #1	* TANK #2
SAMPLE DEPTH (inches) *	SRAF	* GRAS
SAMPLE DATE *	8/4/37	* 8/4/87
*****	****	*****
FARAMETERS *		

	*	•
INORGANICS:		
		
Total Cyanide	ND	6.7
Petroleum Hydrocarbons	710,000.0	54ଉ, ଉଉଉ, ଉ
Total Phenols	ଡ. ୨ଥ	4.9 13.0
Arsenic	8.8	19.0
Cadmium	11.0 26.0	41.0
Chromium	3,500.0	880.0
Copper	•	200.0
Lead	100.0	30. Q
Mercury	Ø. 33	30. 21 47. 21
Nickel	42.0	47.6 0.93
Selenium	4.3 2.3	9.9
Silver		
Zinc	17,000.0	2,900.0
		,
VOLATILE ORGANICS:		
Chlorobenzene	ND	3.9
trans-1, 2, -Dichloroethylen	· · · -	1.5
Ethylbenzene	ND	1.0
Tetrachloroehtylene	· ND	3.6
Toluene	ND	Ø.7
Trichloroethylene	ND	0.7
·		
VOLATILE PRIORITY		
POLLUTANT TOTAL	ND	11.4

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS FER MILLION (Dpm).
"ND" - NOT DETECTED; SINCE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B FOR SPECIFIC DETECTION LIMITS.

TABLE 34 SUMMARY OF VOLATILE ORGANIC COMPOUND GROUND MATER ANALYTCAL RESULTS ECRA AND NJPDES MONITOR MELLS MURDEX INC. - FORDS, NEW JERSEY

THE REPORT OF THE PARTY OF THE

AGRICTER ***********************************	9/25/87	9/25/87	RSD) • 9/25/87	# 9/28/87	+ USS (+ 9/24/87 (9/24/87 s	M65 (MED 9/23/87	• J7S • 9/28/87	• J7D •	RBS #	RAD 6	890 4	5160 +	B11S 4	MI12D +	0130
TOTAL PRIORITY VOLATILE ORGANIC COMPOLINGS	247	285	, 140	2480	110	ND	5	312	28400	18288	ND	ND	330	168	ND	13	ND
Chlorotoluenes Tylenes Miscellangous and Unknowns	10 MD 38	100 100 25	MD MD MD	32000 NO NO	4950 360 180	75 NO NO	796 30 ND	398 0 638 21 0	112 998 ND 2 999	63800 ND 21600	42 10 ND	ND ND 12	ND 198 ND	480 ND ND	16 ND ND	1520 ND 380	ND CM CM
TOTAL NON PRIORITY VOLATILE ORGANIC COMPOUNDS	48	25	NO	32000	5490	75	730	4820	114888	84600	52	12	190	480	16	1880	ND
TOTAL MELL VOLATILE ORGANIC COMPOLINGS	295	230	NED	34400	5600	75	735	5132	142000	94800	52	12	520	640	16	1893	ND

- NOT ANAYLZED.
- NOMBETECTABLE LESS THAN 50 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 5 ppb FOR OTHER VOLATILE ORGANICS.
- NOMBETECTABLE LESS THAN 500 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 500 ppb FOR OTHER VOLATILE ORGANICS IN WELLS 640, J7S AND J7D.
- NOMBETECTABLE LESS THAN 10 ppb.
- NOMBETECTABLE LESS THAN 10 ppb.
- NOMBETECTABLE LESS THAN 10 ppb.
- DETECTED IN SOUTH BLANK. SAMPLE BLANK VALUE HAS ALMEADY BEEN SUBTRACTED OUT.
SEE ANALYTICAL BATA SHEITS PROVIDED IN APPENDIX C.
ALL SAMPLE CONCENTRATIONS IN ARRIS PER BILLION (ppb).



TABLE 34 (CONTINUED) SUMMARY OF VOLATILE ORGANIC COMPOUND GROUND NATER ANALYTCAL RESULTS ECRA AND NIPDES MONITOR WELLS NUODEX INC. - FORDS, NEW JERSEY

MELL MARBER SAMPLE DATE	9/25/87 ±	9160 9/25/87	* K17S * 9/28/87	* K17D +	R19D	* R205 *	R280 -	M21S	M21D	M225	# 9/27/A7	• M23S-2 • 9/23/87 •	9/2//97	. 9/34/67 .	0/24/07 -	0.00.00
PARACTER	• ,									************			*********	*********	********	********
VOLATILE ORGANICS:																
Acrolein Acrylonitrile Benzene Brosofors Brososethane Carbon Tetrachloride Chlorobenzene Chloroethane Chloroethane Chloroethane Chloroethane Chloroethane Chloroethane Chloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropropylene trans-1,3-Dichloropropylene trans-1,3-Dichloropropylene trans-1,3-Dichloropropylene Ethylbenzene Methylene Chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene Iolume 1,1,1-Trichloroethane 1,1,1-Trichloroethane Trichloroethylene Trichloroethylene Trichloroethylene Trichloroethylene Trichloroethylene Trichloroethylene Trichlorofluoromethane Vinyl Chloride Methyl Ethyl Ketone	ND ND .	**************************************	12 12 12 12 12 12 12 12 12 12 12 12 12 1	100 260 980 980 980 980 980 980 980 980 980 98		***************************************	ਫ਼ ਜ਼ੵਫ਼	#\$	29 29 29 29 29 29 29 29 29 29 29 29 29 2	99999999999999999999999999999999999999	2200 * 220 *	2923924 272222222222222222222222222222222222	29292929292929292929292 <u>\$</u>	9949\$99999999999999999999999999	£929\$29\$92\$29\$2929292929\$ <u>\$</u>	\$
TOTAL PRIORITY VOLATILE ORGANIC COMPOUNDS	ND	NO	4070	156	78	ND	ND	11	672	ND	1770	3300	ND	14	ND	17
Chlorotoluenes Xylenes Hiscellangous and Unknowns	ND ND ND	ND ND	21200 ND 5850	2636 72 45	ND ND 16	7 MD 16	16 ND ND	119 33 ND	92 00 2010 274	523 7 ND	14708 7988 254	5200 16J 4900	6 ND 10	ND ND 6	ND ND 13	ND ND 76
TOTAL NON PRIORITY VOLATILE ORGANIC COMPOUNDS	ND	5	27050	2150	16	23	16	152	11500	538	22900	10300	16	6	13	76
TOTAL MELL VOLATILE ORGANIC COMPOUNDS	i ND	5	31120	2380	94	23	16	163	12170	530	24670	13688	16	20	13	93

NA - NOT HNALYZED.

ND - NONDETECTABLE LESS THAN 50 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 5 ppb FOR OTHER VOLATILE ORGANICS.

ND - NONDETECTABLE LESS THAN 5000 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 500 ppb FOR OTHER VOLATILE ORGANICS IN WELL KITS.

ND+ - NONDETECTABLE LESS THAN 100 ppb.

ND+ - NONDETECTABLE LESS THAN 100 ppb IN WELL KITS.

B - DETECTED IN SAMPLE BLANK. SAMPLE BLANK VALUE HAS ALREADY BEEN SUBTRACTED OUT.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

ALL SAMPLE CONCENTRATIONS IN PARTS PER BILLION (nob).

TABLE 34 (CONTINUED) SUMMARY OF VOLATILE ORGANIC COMPOUND GROUND HATER ANALYTCAL RESULTS ECRA AND NIPDES MONITOR MELLS MUDDEX INC. - FORDS, NEW JERSEY

VELL MOBER SAFELE DATE	9/28/87	9/29/87	9/30/87 •	9/30/87	9/29/87	+ L380 + + 9/29/87 +		 9/28/87 	M3702 9/23/87		E39S 9/29/87
PARWETER *									**********		*******
VOLATILE ORGANICS:		•									
Acrolein	ND ND	MA	10 10	ND ND	. 10	ND	ND	NO.	ND	NA	NA
Acrylonitrile	NO.	MA			ND	MO	NO	MD	ND	NA	NA
Benzene	ND.	MA	, ND ND	ND ND	M	39	ND.	ND	48	ND	ΝĐ
Branofaru		MA			ND.	MD	ND	ND	ND	i#A	NA
Bronouethane	ND+	NA	MDe	ND+	HD+	10-	MD+	ND+	ND+	Na	NA
Carbon Tetrachloride	ΝO	NA	. ND	ND	MD	ND	ND	ND	ND	NA	A:I
Chlorobanzene	10	NA	M	ND	. ND	679	ΝŪ	570	30	NA	1447
Chlorodibronomethene	ND .	. NA	MD	NO.	ND	ND	M)	ND .	ND	NA	NA
Chlorosthane	ND4	NA	ND+	ND+	ND+	ND+	ND+	ND+	ND+	46	ŧ₩
2-Chloroethylvinyl Ether	ND .	NG	ND	ΝD	ND	ND	ΝĎ	ND	ΝĎ	NΑ	ИĤ
Chloroform	ND	NA	ND	. ND	KD	1288	ND	1588	89	NA	149
Chloromethane .	ND+	NA	NDe	ND+	ND*	ND+	ND+	ND4	ND:	₩	146
Chlorobromomethane	ND	MA	ND	ND	ND	NÐ	ND	ND	Cit	NA	NA
1, 1-Dichloroethane	ND	NA	ND	NO	ND	ND	ND	ND	ND	NA	NA
1,2-Dichloroethane	ND	NA	ND	ND	. ND	ND	ND	ND	ND	NA	ini
1, I-Dichloroethylene	MD	NA .	Qi4	ND	/ ND	ND	ND	ND	IND	:4	lan
trans-1,2-Dichloroethylene	ND	NA .	ND	NO	/ ND	ND	ND	нD	· 145	119	:14
1, 2-Dichloropropane	ND	NA	ND	NO	ND	ND CM	ND	MD	riiD	NA.	Ni
cis-1,3-Dichloropropyl ese	ND.	NA	NO	ND	ND	ND	ND	. ND	ND .	NA.	:143
trans-1,3-Dichloropropylene	ND	NA	ΝĐ	ND.	NĐ	ND	ND	ND	ī:D	· NA	Alt
Ethylbenzene	NĎ	NA	ND	ND	ND	28	ND	ND	ND	:63	1-3
Methylene Chloride	NO	NA	NĎ	ND	6488	ND-B	Œ.	ND	ND-B	NA.	NA
1, 1, 2, 2-Tetrachloroethane	ND	- NA	ND	NG	ND	· ND	Ü	ND	ND	:64	Nέ
Tetrachloroethylene	ND 758	NA	ND	ND	ND	ND	NO	ND	ħΦ	140	i na
Toluene	75R	4300	. NÕ	ND	964AB	18888	ΝĪ	Bades	16.36	13	
1,1,1-Trichloroethane	ND	NA	130	ið	AD.	NL			CN	.Nr.	
1, 1,2-Trichlorosthams	ND	Ĭ	NC	Ñ	MD	ND	NO	100	NE .		1973
Trichloroethylene	ND .	NA	iā	NO.	ЖĎ	Ĩ	ND	ial.	12		
Trichlorofluoromethane	MD .	NA	ND	Ñ	Ñ	NO	ND	اندا	ND Qu	3-1	
Vinyl Chloride	ND+	Ná	الله	ND:	ND#	ink.	NC+	NS.	ſώ+	in	·n
Methyl Etnyl Ketone	NG	NA	λĹ•	ND:	NC+	NC.	NA	13	NÃ.	NA	ija Ija
TOTAL PRIGRITY VOLATILE ORGANIC COMPOUNDS	ئة	-362	:D	ND	18290	3700	ND	18588	1760	ND	19
MITHLET PROMET COMMONICS	مه	1360		140		_	RU			NU	
Chlorotoluëres	112	NG	568	140	12900	27200	ND	76700	1418	NA	NA
lylenes	ND	24	GM	IID	ND	358	ND	ND	ND	ND	ND
Miscellaneous and Unknowns	ND	ka	ND	ND	754	31-	ND	3340	236	NĀ	NÁ
TOTAL NEW PRIGRITY VOLATILE ORGANIC COMPOUNDS	112	MA	588	ND	13700	27600	ND	89988	1650	MD	ND
TOTAL HELL VOLATILE ORGANIC COMPOUNDS	197	4396	588	ND	23900	31389	ND	98588	3410	ND	19

NOT ANALYZED.

NONDETECTABLE LESS THAN 50 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 5 ppb FOR OTHER VOLATILE ORGANICS.

NONDETECTABLE LESS THAN 5000 ppb FOR ACROLEIN AND ACRYLONITRILE; LESS THAN 500 ppb FOR OTHER VOLATILE ORGANICS IN HELLS L30S AND K36D2.

NONDETECTABLE LESS THAN 10 ppb.

NONDETECTABLE LESS THAN 1000 ppb IN HELLS L30S AND K36D2.

DETECTED IN SAMPLE BLANK. SAMPLE BLANK VALUE HAS ALREADY BEEN SUBTRACTED OUT.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

ALL SAMPLE CONCENTRATIONS IN PARTS PER BILLION (ppb).

TABLE 35 SUMBLER OF EASE/NEUTRAL COMPOUND GROUND WATER ANALYTIME RECORDS ECRA AND NIPPES MONITOR WELLS NUODEX INC. - FORDS, NEW JERSEN

MELL MUNDER SAMPLE DATE	• D2S • 9/25/87	D2D 4 9/25/87 4	A3D 9/25/87	G4D +	9/24/87	05D 3/24/87	9/23/87	9/23/87 (J75 9/28/87	* J7D * * 9/28/87 *	RES ±	hài +	1, 2, 5, 4	5.00 ·	E115 •	%i≟i • 9/23/87 •	5130 JM/12/87
PARAMETER			!##########	********	 	*********		*********		**********	*******	********	1049#42 9 11	********	*******	*********	*******
BASE NEUTRAL COMPOUNDS:								•									
Acenaghthere Acenaghthylere Anthracene Benzo (a) Anthracene Benzo (b) Fluoranthene Benzo (a) Fluoranthene Benzo (a) Fluoranthene Benzo (a) Fluoranthene Benzo (a) Fluoranthene Benzo (a, h, i) Perylene Benzo (a, h, i) Perylene Benzo (a, h, i) Perylene Bis (2-chloroethoxy) Nethal Bis (2-chloroisopropyl) Ether Bis (2-chloroisopropyl) Ether Butyl Benzyl Phenyl Ether Butyl Benzyl Phenyl Ether Butyl Benzyl Phenyl Ether Chryssee Dibmnzo (a, h) Anthracene Bi-e-Butylghthalate 1, 2-Bichlorobenzene 1, 3-Dichlorobenzene 1, 3-Dichlorobenzene 2, 4-Dinitrotoluene Di-n-Octylghthalate 1, 2-Biphonylhydrazine Fluorene Hexachlorobetadiene Hexachlorobetadiene Hexachlorobetadiene Hexachlorobetadiene Hexachlorobetadiene Hexachlorocyclopentadiene Hexachlorocycl	10 10 10 10 10 10 10 10 10 10 10 10 10 1		3888888888888888888888888888888888888			35655555555555555555555555555555555555			2732922922272222222222 22222222222222222	35655655555555555555555555555555555555	닷컴먼딩 플로 한 한 한 한 한 한 한 한 한 한 한 한 한 한 한 한 한 한	66666666666666666666666666666666666666	: ::::::::::::::::::::::::::::::::::::	355353535353555555555555555555555555555	555555555555555555555555555555555555555	35555555555555555555555555555555555555	Ŏĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸ
TOTAL PRIORITY	ND ND	ND	ND ND	NA NA		26	MA MA	NA NA	610	2480	78	140	NA NA	NA NA	ND 	NA	ND
BASE NEUTRAL COMPOLADS TOTAL NON PRIORITY BASE NEUTRAL COMPOLADS	81	12	Ю	NA	NA	160	NA	MA	6348	28200	10	55	NA	NA	69	NA	419
TOTAL MELL Bage Neutral Compounds	61	15	ND	NA	NA	186	NA	NA .	6950	30600	80	55	NA	NA	69	NA	419
,	MA = MOT	AMAI V TEN										,					

⁻ NOT ANALYZED.
- NONDETECTABLE LESS THAN 10 ppb.
- NONDETECTABLE LESS THAN 10 ppb IN WELLS J7S AND J7D.
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.
ALL SHAPLE CONCECTRATIONS IN PARTS PER BILLION (ppb).

TABLE 35 (CONTINUED) SUMMARY OF BASE/NEUTRAL COMPOUND SKOUND MATER ANALYTCAL RESULTS ECRA AND NIPOES MONITOR MELLS NUODEX INC. - FORDS, NEW JERSEY

ではない

* K17D * R19D * R28S * R28D * K21S * M21D * M22S * M22D * M23S-2 * D25AD * D25AD * D25D * G26S HELL NUMBER • D16S • B16D • K17S * 9/23/67 * 9/23/67 * 9/26/67 * 9/26/67 * 9/24/67 * 9/24/67 * 9/24/67 * 9/23/67 * 9/23/67 * 9/23/67 * 9/23/67 * 9/23/67 * 9/23/67 * 9/23/67 * 9/23/67 * 9/24 PARAMETER ******************* BAGE NEL/TRAL COMPOUNDS: Acenaghthene Acenaghthylene 88888888888 556 99 NO NO NA ND ND ND ND NÁ Anthracene **SES** ND ND ND ND NA 666 Benzo (a) Anthracens ND ND ND M NA NA Benzo (b) Fluoranthene NA ND ND ND ND Ñ Denzo (k) Fluoroanthene NA NA ND NĎ ND ND Benzo (a) Pyrene 8 ND NA ND あると MA ND ND Banzo (g.h.i) Perylana ND NA NG NG ND ND ND Ñ Denzidine Ñ 88 NA ND ND ND Dis (2-chloroethy)) Ether Dis (2-chloroethoxy) Mether NO NO M M NG NG NA ND ND ND ŏ M NA NA ND ND ND ΝA 8555 Bis (2-ethylhexyl) Phthalate NA MA ND æ ND NA 160 ND 11 NA Bis (2-chloroisograpyl) Ether 4-Branoghenyl Phinyl Ether Ň 100 NA NA NA NA NA NA ND ND ND ND NA Ñ Ñ ND ND) ND NA Butyl Bunzyl Phthalate 2-Chloromaghthalene 4-Chlorophonyl Phenyl Ether Ď Ň **888** ĸ NA NA ND ND N ã NĎ 图 M NA NA ΝĐ ΝĎ ND NΑ Ñ ND NA NA ND ND NĎ NA Chrysene Dibenzo (a,h) Anthracene 5555 68 ND M ND NA NA ND ND ND NA 医医医医医医医医医医 Ň ND NĎ ND Di-w-Butylphthalate ND ΧÕ ND NA NA ND ND ND 1,2-Dichlorobenzene 189 ΝĎ ND ND. NA NA NA 19 ND ND NĒ NA 1.3-Dichlorobenzane 100 2220 NA NA Ю NO ND ND ŒΙ Ň SES NA 1.4-Dichlorobenzens M 18 ND ND ND 3,3'-Dichlorobenzidine Diethylphthalate Diethylphthalate 2,4-Dinitrotoluene 555 Ñ i i i i **6**8 ND ND ō M NA N) ND NĎ ١Ō NÕ NA NA ΚĐ ND ND NA Ñ NĎ NĎ NA ND NĎ NiA ND 2,6-Dinitrotor 5555 100 555555555 NA ND ON ND M 8888 88 ND ND NA NA 1, 2-Digheny lhydrazine Fluoranthene ND M NA ND NĎ ΝŪ ND NA M ND ND ND NA NA NA ND ND NA Fluorene 10 Ñ 18 Ñ NA ND ND NA NA ND Hexach Lorobenzone ō ND NG NG NA NA ND ND ND Henach Lorobutadiene 10,00 Ñ 200 ND ND ND Hexach loroethane M M NA NO ND Ü ND ND NĎ Ñ ١Ō. NA NA ND ND NĐ Hexachlorocyc lopentadiene Indeno (1,2,3,c,d) Pyrene MA ND ND ND MA Isophorone 100 ND NÕ MA NG NG ND ND NA ND 140 Naghthalene Nitrobenzene ND IO ND NA MA ND NĎ 1010 iõ M 医多唇医多唇 NA NA ND ND ND ND H-Mitrosodiaethylamine H-Mitrosodighanylamine H-Mitrosodi-n-Fropylamine MÕ M NĎ NĎ NA NA ND ND ND SSSS SSS Ñ ND ND 55555 Ю NĎ 10 M 99 ND ND ND M ND ND MO Phonanthrone ND ND Ĭ M ΝĎ NA ND ND ND ΙA NA NA M 1, 2, 4-Trichlorobenzene NŌ. M ND MD NA NA ND ND ND NA ND Ñ N ND NA NA NA NA NA But y I benzene NĎ ND ND NA Ñ ND NA NA NA ND ND NĎ NA ND TOTAL PRIORITY MA NA 220 ND ND NA dase neutral compolinos ND 218 18 26 KD ND NA NA 11 TOTAL NON PRIDRITY ND NΑ NA 6450 base neutral compolnos ND 5960 1830 357 123 34 NA NA MA TOTAL WELL BREE NEUTRAL COMPOUNCS NA NA 6678 11 NA 3970 1850 383 123 34 MA 6

NOT ANALYZED.

NONDETECTABLE LESS THAN 10 ADD. SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C. ALL SAMPLE CONCENTRATIONS IN PARTS PER BILLION (ppb).

TABLE 35 (CONTINUED) SUMMARY OF BASE/NEUTRAL COMPOUND GROUND MATER ANALYTCAL RESULTS ECRA AND NUPDES MONITOR MELLS NUCLEX INC. - FORDS, NEW JERSEY

10 10 10 10 10 10 10 10 10 10 10	100 200 200 200 200 200 200 200 200 200	NO NO NO NO NO		* 9/26/8/ HITTHERES	* 9/23/87 ************************************	NA NA	NA NA
. 19 19 19 19		2535	ND ND ND	ND ND	KD	NA	NA
. 19 19 19 19		2535	ND ND ND	ND ND	KD	NA	NA
. 19 19 19 19		2535	ND ND ND	ND ND	KD	NA	NA
. 19 19 19 19	ND ND ND ND	ND ND	ND ND	ND	MD (ED)		
. 19 19 19 19	ND ND ND ND	ND ND	HED.				NA
. 19 19 19 19	ND NO ND	ND			, KD	NA NA	NA NA
, 160 , 160	MO MD		, NED	NO	ND CM	NA.	NA ·
. 10	MO	ND	iõ	Ñ	16	NA.	140
. 10		NO NO	Ã	100	ΝĎ	NA	NA NA
MD	MD	ND	ND	ND ND	ND	NA	NA
	ND ND	ND ND	NO	ND	ND	NA	NG NG NG NG
Ж	ND	W	MD	ND	ND	NA	MA
ĬÕ.	MO	NO	MD	NO	, NO	NA	NA
NO	MO	. 10	NO.	MO.	ND	NA	NA
ND ND	10	ND ND	MD	ND ND	NO NO	NA	NA
NO NO	100 140	NO NO	10	NO	10	MA NA	NA NA
100	100	20	NO.	NO	ND .	NG.	MO
10	100	¥0	100	Ñ	ND ND	NG.	NA NA
NO.	ND.	MD	ÃÕ.	ND	ND	NA	NA
ND '	. 10	ND	ND	ND	ND	NA	NA
· ND	· ND	ND	MD	ND	ND	NA	NG.
ND	ND	NO	ND :	850	ND	NA	NA NA
10	ΝĎ	ÄÕ	NO.	MD	ΝÖ	NA	NA
M	NO	ΝŌ	10	MO	MO	NA	MA
ND	100	MD MD	MD	NO	MD	NA.	MA MA
HŌ	140	ND ND	ND	10	. 100	NA.	MH.
ND ND	100	- FE	. M2) MD	MD MD	ND ND	NA NA	MA
ã	NO NO	ND ND	, so	Ñ	Ñ		NA NA
Ã	NO.	Ñ	76	NO	Ã	NA.	MO
ĬÕ	iõ	NO	ìõ	MD	λÕ	MA	NA NA NA
NO	НĎ	ND	ND:	ND	ND	NA	NA
	140			MO			NG NG NG NG NG NG
HO	MD	ND		NO			NA
M	ND.	MD		ND		NA	NA
ĬŪ	MD	ND.		MO	160	NA NA	NEI
	7						NGA NAC
3	2	3		35			, Tes
100	70	36		26	36		20
. 100	XD	iii					NA
NO.	ĬĎ	NÕ	ĬĎ	MD	NÖ.	NG -	NA
			· 10	ND	НÖ	NA	MA
	ND			ND		NA	MA MA MA MA MA
NO	ND	MD	ND.	ND	ND	MA	NA
							MA
			NO.				NA NA
Ñ	ã	ND	Ã	Ä	XĐ	· NA	NA
							
HD	ND	NO	10	850	ND	MA	MA
				25100	24500	***	***
MD	62000	18662	NU.	ai	C13 (10	164	· NA
10	65866	18006	ю	26400	24500	NA	NA
	10 10 10 10 10 10 10 10	NO NO NO NO NO NO NO NO NO NO NO NO NO N	100 MD MD MD MD MD MD MD MD MD MD MD MD MD	MC MC MC MC MC MC MC MC MC MC MC MC MC M	NO NO NO NO NO NO NO NO NO NO NO NO NO N	MC MD MD MD MD MD MD MD MD MD MD MD MD MD	MD MD MD MD MD MD MD MA MD MA MD MD MD MD MD MD MD MD MD MD MD MD MD



HOT GRALYES.

- NOMETECTABLE LESS THOM 10 ppb.

- NOMETECTABLE LESS THOM 200 ppb IN MELL F296.

- NOMETECTABLE LESS THOM 200 ppb IN MELL L306.

- NOMETECTABLE LESS THOM 200 ppb IN MELL L306.

- NOMETECTABLE LESS THOM 200 ppb IN MELL K3602.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

- RLL SPURLE CONCENTRATIONS IN PARTS PER BILLION (ppb).

TABLE 36 SUBMARY OF INDRGONIC METALS, PETROLEUM HYDROCARBONS, FORMALDEHYDE, COLIFORM, AND AM GROUND WATER ANALYTICAL RESULTS ECRA AND NIPOES MONITOR MELLS MUDDEX INC. - FORDS, NEW JERSEY

• ECRA •	D25 + 9/25/87 +	D2D + 9/25/87 +	A30 9/25/67	640 9/28/87	055 9/24/87	• 050 • • 9/24/87 •	M6S 4 9/23/87	M6D • 9/23/87 •	J7S + 9/28/87 +	J7D + 9/28/87 +	R8S 9/25/87	RAD 9/25/87	9/29/87	9/29/87	9/29/87 +	9/23/87 +	10/12/67
***				2													
0.05 1.0	(0. 020 (0. 018	(8. 828 (8. 616 MG	169 169 160	MA MA	NG NG	(8. 828 6. 845 MG	NA 0.061 0.33	NA 8. 18 8. 854	NA NA NA	NA NA NO	NA NA NA	NA NA NA	NA NA NA	NA NA NA	(0. 828 (0. 818 NO	NA (0.019 0.13	(0.020
0.01 0.05	(0.005 (0.002 (0.01	(8, 665 (8, 662 (8, 61	NA NA NA	MA MA	NA NA NA	(0.005 (0.003 (0.01	NA (8.002 (8.01	(8.81 (8.82	NA NA NA	NA NA NA	NA NA NA	NA NA NA	NA NA NA	NA NA NA	(8. 865 (8. 862 (8. 81	(0.082 (0.082	(d. 600)
0.05	NA (8. 985 NA	MA (8. 865 MA	NA NA NA	NA NA NA	NG NG NG	NA (0.005 NA	14 (0.065 1.1	5.5 (0.885 8.29	NA NA NA	NA NA NA	14A 14A 14A 14A	FAN PAN PAN	NA NA NA	NA NA NA	NA (9.005 NA	5. 8 (8. 885 8. 22	NA (0. 895 NA
0.002 0.01	(0. 040 (0. 005	(8, 848 (8, 865	MA MA MA	NA NA	NA NA NA	(8. 648 (8. 665	NA (0.005	NA (0.005	(0.0002 NA NA	(8.8882 NA NA NA	NA NA NA	NA NA	NA. NA	NA NA NA	(0. 848 (0. 985	NA (0.005	(0.0000 (0.044) (0.005 (6.018
5.0	(8. 828 (8. 818 (8. 828	NA (8. 816 8. 878	NA NA NA	MA MA MA	NA NA NA	NA (0. 018 0. 632	120 NA NA	850 NA NA	NA NA NA	NA NA NA	NA NA NA	NA NA NA	NA NA NA	NA NA NA	NA (0.010 0.092	220 NA NA	NA (0. 010 0. 652
	ය	25	ැක් දක් 16	MA MA	NA NA NA	(25 (29 6.8	NA NA (2. 0 6. 8	NA (2.0	(25) NA	(25 NA	(25 NA	(25 NA	NA NA	NA NA NA 6.0	NA (25 17 5.8	NA NA (2.0 7.0	NA 33 (25 (2.0 - 3)
	9. 05 1. 0 0. 05 1. 0 0. 05 1. 0 0. 05 1. 0 0. 05 0. 05	**************************************	**************************************	GUIDELINE* 9/25/87 * 9/25/			**************************************	GUIDELINE* 9/25/87 * 9/25/87 * 9/25/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/87 * 9/24/87 * 9/23/87 * 9/24/	GUIDELINE* 9/25/87 * 9/25/87 * 9/25/87 * 9/28/87 * 9/24/87 * 9/23/	California Cal	######################################	######################################	######################################	CR. CR.	Ca. Ca.	######################################	######################################

- NOT ANALYZED. SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C. ALL SAMPLE CONCENTRATIONS IN PARTS PER MILLION (ppm).

TABLE 36 (CONTINUED) SUMMARY OF INORGANIC METALS, PETROLEUM HYDROCARBONS, FORMALDENYDE, COLLIFORM, AND PH GROUND HATER ANALYTICAL RESULTS ECRA AND NUMBES MONITOR WELLS NUMBES INC. - FORDS, NEW JERSEY

,这种是一种,我们是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是 第一个一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是一种,我们也是

****************	 	 	*******	********	********	*********	********	*******	********	********	*******	*******	*********	*********	*********	*******	********
HELL NUMBER	+ ECRA	D16S 4	D160 +	K175 •	K17D #	R19D =	R205 +	R200 +	M215 +	M21D +	M22S +	M22D +	M235-2 +	D25AS +	D25AD +	DesD •	G26S
sangle date	•GUIDELINE	1/a/8/	1/23/8/ •	9/28/8/	9/28/8/	10/2/8/	9/24/8/	9/24/8/ +	9/23/8/ +	9/23/87	9/23/87 *	9/23/87 +	9/23/87 *	9/24/87 4			
MARMETER	**********	********	******	********	********	********	********	*********	*********	********	********	*********	********	*********	*********	********	********

INDREANICS:				:							•		•				
Antimony		(8. 629	(0.020	NA	NA	(0. 828	(0.020	(0.020	NA ·	NG	NA	NA	(0. 320	(0.020	9.0 26	(0.020	NO
Arsenic	8.65	(0.010	(0.010	NA	NA	(0.010	(0.010	(0.010	0.078	0.021	0.061	(0.010	9.067	(0.010	(0.010	(0.010	⟨0./
Barium	1.0	NA	NA	NA	· NA	· NA	NA.	NA	0. 38	0.41	0.43	ø. 33	NA	NA	NA	NA	S. Kilmer
<u>Deryllium</u>		(0.005	· (0.005	NA	NA	(0.005	(0. 96 5	(8. 995	NA	NA .	NĄ	NA	(0.005	(9.005	(0.005	(8. 885	NA .
Çadisiya	0.01	(0.002	(0.002	NA	NA 1	0.006	(0.002	(0.082	(0.01	(0.002	(0.002	(0.002	(0.882	(0.002	(0. 982	(0.082	(0.002
Dirosius	r.62	(B, 01	(0.01	NA .	MA	(0.01	(8.01	(0.81	(0.01	(0, 61	(0.01	(0.01	(0.01	(0.01	(0.01	(0.01	(0, 01
Copper	1.0	(8, 828	(0, 020	NA	NR	(0. 028	(0. 020	(0.020	. NA	NA NA	, NA	, NA	(3. 329	(8. 020	(0.020	(0.028	NA
Iron		189	NA .	NA	NF)	NA :	NA .	NA 10 AOS	13	4.3	19	18	NA .	NA 10.005	NA 40 - 205	NA CO	1.1
Lead	8.65	(0.005	(0.005	NA	NA NA	(0, 965	(8.995	(0.005	(0.995	(0.005	(0.005	(0.005	(0.005	(0.005	(0.985	(0.005	(0.005
Nanganese		781 (0.0000	(6)	NH COOK	NH 10. COOO	NA AAAAA	NA (0. 0000	NH (0.000)	9.35	8.842	8.61	0.090	NA (3. Jago)	NH (0.3322	NA (0. 2002	NA	0, 895 (8, 8662
Mercury Nickel	4.002	(8, 9662	(0.0002	(9.0002	(0.0002	(0.0002	(9.0002	(0.9992	(0.9982	(0.000 2 NA	(0.0802 NG	(8. 8882 NA	(0. 866 2 (8. 843	(8. 8482 (8. 848	(0. 0002 (0. 040	(0.0002 (0.040	NA
nickei Selenium		0.060 (0.005	(9, 948 (9, 995	NA NA	NG NG	(8. 848 (8. 885	(8. 848 (8. 865	(8. 849 (8. 885	NA (0.00 5	(8.005	(0.005	(0.005	(0.005	(0.005	(0.005	(0.005	(9, 995
Silver	0.81 0.85	(0.010	(0.010	NA.	NO.	(8.010	(8.018	(8.010	8.018	(0.010	(0.018	(8.018	(0.010	(0.010	(0.018	(0.010	(0, 610
Sodium	4.63	MO	10.010	M	140	NA	NA	MO	93	77	62	190	NA NA	NA	NO.	MQ	12
Thallium		(0, 010	(0,018	NA .		(8, 828	(0.010	(8, 818	, MA	, NA	NA NA	NO.	(0.010	(0.010	(0.010	(8.010	
linc	5.0	8.14	8.822	NA	MA	0.088	(0, 020	0. 828	ÑÃ	NA	NA	NA	0.064	0. 033	(8. 828	0.041	NA ·
Petroleum Hydrocarbons	1.0	MA	NA	ÑÃ	140	NA	NA	NA	NA	ÑA	NA .	NA.	NA.	NA	NA	NA	NA
Formaldehyde	•••	(25	෭ඁ	ැක්	(25		ැස	(25	NA	NA	NA	NA	•	(25	(25	(25	NA
Coliforn		ැස ැක	(28	NA NA	NA	යු වී.4	(26	(20	9#	(2.0	(2.0	2**	30***	88	170	NA	(4.8
OH (UNITS)	5-9	3.7	6.1	5.8	6.2	77.4	6.4	6.6	6.4	7.0	6.6	6.8	6.6	6.8	7.3	5.8	5.7

NA - NOT ANALYZED.

**NOTE - THE NUMBER OF POSITIVE TUBES IN THE 10 ML SAMPLE PORTION WAS 2.

**NOTE - THE NUMBER OF POSITIVE TUBES IN THE 10 ML SAMPLE PORTION WAS 1.

***NOTE - THE NUMBER OF POSITIVE TUBES IN THE 10 ML SAMPLE PORTION WAS 5.

! - SAMPLE WAS LOST IN LABORATORY ACCIDENT.

SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.

ALL SAMPLE CONCENTRATIONS IN PARTS PER MILLION (ppm).

TABLE 36 (CONTINUED) SUMMARY OF INDREANIC METALS, PETROLEUM HYDROCARBONS, FORMALDEHYDE, COLIFORM, AND PH GROUND HATER ANALYTICAL RESULTS ECRA AND NJPDES MONITOR WELLS NUODEX INC. - FORDS, NEW JERSEY

****************	**********	*********	******	********	*******	*********	********	********	********	********	*******	********
MELL MUNBER	• ECRA	6260 +	B270	• F29S		+ L30S +	L300 +		K36D2 *		E38S	* E39S
	+GUIDELINE+	9/25/87 +	9/29/87	9/39/87	9/30/87	* 9/29/87 *	9/29/87 +	9/25/87	9/28/87 +	9/23/87 +	9/29/87	* 9/29/87
000000000000000000000000000000000000000	 	**********	******	*********	********	*********	*********	********	********	********	********	********
PARAMETER												
*******************************	•••				•							
INORGANICS:					,							
Antimony		(0. 020	NA	NA	NA	NA	NA	(0.020	(0.020	(0.020	NA	NA
Arsenic	0.05	(0, 010	NA	NA.	NA	NA	- NA	(0.010	(0.010	(0.010	NA	NA
Barium	1.0	NA .	. NA	NA	NA	NA	NA	NA .	NA	, NA	NA	NA
Beryllium		(0.005	NA NA	NA	NA	NA .	NA	(0.005	(0.005	(0.005	NA	NA
Cadhiun	0.01	(0. 992	MA	NA	NA	NA .	NA	(0.002	(0.082	(9.982	NA	NA
Chronium	9.6 5	(0.01	NA NA	NA	NA NA	MA MA	NA NA	(0. 01	(0.01	(0.01	na Na	na Na
Copper	1.0	(9. 929 NA	NA NA	NA	NA.	NA NA	NA	0.058 Na	(0.020 NG	(8.020 NA	NA NA	NA NA
Iron Lead	0.65	(0.005	ÑÃ	NA NA	ÑÃ	NA.	NA NA	0.003	(0. 805	J. 306	NA	NA NA
Hanganese	•.•.	NA	ÑÃ	, NA	ÑÃ	. 140	NA	NA	/6. 997	NA	NA	NA .
Hercury	8.992	(8.9982	ÑÃ	/ ÑÃ	ÑÃ	(9.9882	(8, 8682	(0.0002	(0.0002	(0.0302	NA	NA '
Nickel		(0. 048	ÑÃ	/ NA	ÑÃ	NA .	NA	0.060	(0.046	(0.040	NA	NA
Selenium	0. 61	(9. 965	NA	NA	NA	NA .	NA	(0.005	(0.005	(0. 885	NA	NA
Silver	0.65	(0.010	NA	NA	NA	NA	NA	(9. 010	(0.010	(0.010	NA	NA.
Sodium		NA	N/A	, NA	- NA	NA	NA	NA	NA	NA	NA	NA
Thallium		(0. 0 10	- NA	· NA	NA	NA	NA	(0.010	(0.010	(0.010	NA	NA
Zinc	5.0	(0, 920	NA	NA	NA	NA	NA NA	0.34	(0.058	4.6	NA ·	· NA
Petroleum Hydrocarbons	1.0	NA	NA	NA.	NA	NA	NA	_ NA	NA	ŅA	(1.0	1.5
Formaldehyde		(25	NA	(25	(25	(25	(25		(25		NA	NA
Coliforn		NA	NA	NA	NA	NA	NA	NA	NA	NA	ЙA	NA
pH (UNITS)	5-9	5.0	3.6	6.8	5.2	3.2	5.4	3.5	5.6	5.2	ŧ	6.1

⁻ NOT ANALYZED
- SAMPLE MAS LOST IN A LABORATORY ACCIDENT.
- A NON-PRESERVED SAMPLE MAS NOT RECEIVED FOR THIS ANALYSIS.
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX C.
ALL SAMPLE CONCENTRATIONS IN PARTS PER MILLION (ppm).

TABLE 38 SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS LEACH FIELDS NUODEX INC. - FORDS, NEW JERSEY

******	******	******
SAMPLE POINT	* BLDG. 56-S	* BLDG. 22 *
	* GRAB AT 42	* GRAB AT 34 *
SAMPLE DATE	* 8/7/87	* 8/7/87 *
******	******	*******
PARAMETERS	•	•

INDRGANICS:		
Arsenic	10	17
Beryllium	Ø. 34	ND
Cadmium	1.1	4.2
Chromium	16	8.8
Copper	58	38
Lead	83	110
Mencury	0.11	0.38
Nickel	8.3	16
Selenium	0.80	0.73
Zinc	49	67
Total Phenols	0.40	ND
		•
BASE/NEUTRAL ORGANICS:		
		· ·
Acenaphthalene	13	ND
Anthracene	12	ND
Benzo (a) anthracene	21	ND
Benzo (b) fluoranthene	34	ND
Benzo (k) fluoranthene	34	ND
Benzo (a) pyrene	31	ND
Bis (2-Ethylhexyl)phthalate Chrysene		1
Fluoranthene	28	ND
Fluorene	57	1
Phenanthrene	15	ND
Fyrene	50	ND .
ryrene.	38	ND
BASE NEUTRAL PRIORITY	333	
POLLUTANT TOTAL	333	2

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE. ALL CONCENTRATIONS ARE IN PARTS PER MILLION (ppm).
"ND" NOT DETECTED; SINCE DETECTION LIMITS VARY,
SEE ANALYTICAL DATA SHEETS PROVIDED IN APPENDIX B.

SUMMARY OF TEST TRENCH SUMPLE ANALYTICAL RESULTS SHAPE IN TRESULTS NUMBER INC. - FEARS, NEW 28 RSET

TEST TREKEN	. 91	a	83 ·	94 .	es e	i)(,	₹1 •	68	83	COMPOSITE (COMPOSIT 1,2,7,8
SAMPLE DATE LEABORE DATE	+ 92 d7 +		9/2/87 4				3/2/87 •	2		9/2/87	1,2,7,8, 9/2/87
GRANETERS ************************************	•										
NORGA::1CS:											
Utal Eyanide	140	NE	· 140	ND	ND	ND	ND	ND	ND	NA	ND
etroleum Hydrocarbona	360. ₹	100.0	239. 0	60.0	100.0	3200.0	120.0	140.0	ND	439. €	110.0
utal fhemols ntimony	NE.	4.6 ND	7.4 MD	11.0 ND	0.2 15.0	10.0 ND	14.0 ND	0.8 ND 4	0.7 ND	NFA NED	7.6 65.0
rsenic	6.3	27.0	170.0	ذ.8	4.5	3. 7	ND	14.0	2.2	14.0	19.0
erylisum admisum	1.2 2.6	NE)	1.5 4.9	ND 1.2	ND 1.8	4.4 2.3	MD 0.2	0.6 2.6	ND 5, 8	1.2 1.8	ND 6.6
hrom) um	18.0	11.0	196.6	16.0	6.5	20.0	4.9	14.0	11.0	21.0	27.0
opp e r e ad	ċ3U. 0 340. 0	26. 0 62. 0	250. 0 190. 0	17.0 48.0	36. ð 17 00 . 0	130.0 97 00.0	3. 8 16. 0	27. 6 12 0.0	35. 0 81 00. 0	51. 0 1200. 0	11 0.0 4300.0
ercury	0.5	J. 9	4.7	0. 3	0.3	5.8	0.1	6.6	ND	1.6	8.8
ickel elenium	48. 8 ND	3. 6 1. 0	45.0	22.0 ND	5.7 ND	91. <i>0</i> ND	ND ND	7. 8 ND	5.9 2.2	42.0 ND	15.0 ND
lver	0.6	0.9	1.3	8.4	NO	58. 0	6.7	0.1	NO.	3.2	8.5
hallium inc	ND 1 90 . 0	NE 17.0	ND 36. #	MD 26.0	ND 56. 6	ND 339. 0	ND 2.3	ND - 21.8	ND 29. 0	ND 70. 8	ND 63. 0
DLATILE URGANICS:											
hloreform	ND	ND	ND:	0.8	ND	ND	ND	ND	ND	ND	ND
thy i benzene o l vene	ND NG	ND Cin	ND ND	ND 8.4	ND HD	ND 16.0	ND ND	ND ND	- ND ND	ND 1.1	0.1 ND
						10.0					
NATILE PRIORITY POLLUTANT TOTAL	M	84D	ND	1,2	ND	16.0	ND	ND	ND	1.1	0. 1
OLATILE LIBRARY SEARCH:											
otal Xylenes	ND	ND	:UD	0.84	ND	ND	ND	MD	NO	ND	0.34
ESTICIOES:										•	
4' -DD0	ND	ND	ND	61.6	ND	ND	ND	10	ND	ND	MO
ieldrin Mosulfan II	ND ND	6. 4 ND	MD .	ND 24. 0	ND ND	ND ND	. ND ND	ND ND	ND ND	ND ND	ND ND
xaphene	ND	ND	122.0	ND	ND	ND .	- ND	ND	ND	NO	14.0
STICIDE TOTAL	NE	L. 4	122.0	85.0	ND	MD	ND .	ND	ND	ND	14.8
CID EXTRACTABLE ORGANICS:											
4-Dimethylpherol	ND:	2.0	ND	ND	ND	NS	ND	ND	ND	ND .	ND
enthach Loropher», L henol	NE. NED	ND 1.8	ON Ja	NE ND	UZ GA	ND ND	ND ND	. ND ND	ND ND	5. 2 1. 5	ND ND
ID EXTRACTABLE TOTAL	ND	3.0	ND	ND	ND ·	ND	ND	ND	ND	6.7	ND
SE/NEUTRAL UNGANIES:		-				•					
ith acere	ND	ND	ND	ND	ND	ND	NG	ND	ND	2.3	ND
s lé-Éthyine vyl. polloalate	ND	ND	ND	ND	14.0	140	ND	ND	ND	ND	ND
uui ere	Gii	, Na	NB	NC	MD.	ND	ND	ND	ND	2.7	ND
SE/NEUTRAL FRIORITA POLLUTANT TOTAL	101	NE-	ND	ND	14.0	ns.	ND	ND	ND	5. 0	ND
HASE/NEUTRAL BRARY SEHRCH:											
ilor Auluene	ı	ė.8	11.6	25.4	115.9	(+3	47	ND	900	391. 3	4.3
TO SECTORING											

DNLY PARAMETERS DETECTED IN AT LEAST ONE SANDLE ARE SHOWN ABOVE.
ALL CHALENTRALTIMS ARE IN PARTS PER MILLION (ppm).
"NO" N.1 DETECTED: STACE DETECTION LIMITS VARY, SEE ANALYTICAL DATA SHEETS PRIVIDED IN APPENDIX B.
"NO" N.1 DATA VALUE.
"THE DEMOTES CONJUNTATION LESS THAN EPA MAXIMUM LECHLEACHAIL CONCENTRALIUM."

Table 40 Summary of test trench sample analytical results Landfill 2 Nuodex Inc. - Fords, New Jersey

TEST TRENCH SAMPLE DATE	10 4 9/2/87	11 9/2/87	12 9/3/87	13 9/3/87	14 9/3/87	15 9/3/87	16 9/3/87	COMPOSITE 9/3/87
PARMETERS	**	**************	***********	***********				
INORGANICS:								
Petroleum Hydrocarbons Total Phenols Antimony Ansenic Beryllium Cadmium Chromium Copper Lead Mercury Nickel Selénium Silve: Thallium Linc	ND 7 ND 8 ND 9 16.00 15.	600.0 0.5 10 26.0 0.7 4.3 52.0 118.0 2.0 18.0	478.8 3.8 MD 31.0 33.1 36.0 58.0 1.2.2 8.4 35.8	85. 8 8. 9 8. 9 1. 6 23. 8 27. 8 34. 2 7. 5	33.8 9.4 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1	189.8 8.4 ND 2 ND 2 ND 1 ND 1 ND 1 ND 1 ND 1 ND 1 ND 1 ND 1 ND 1 ND 2 ND 2 ND 2 ND 2 ND 2 ND 2 ND 2 ND 3 ND 3 ND 4 ND 1 ND 1	198.8 1.2 ND 7.6 ND 2.0 14.0 62.0 180.0 80.0 80.0 80.0 80.0 80.0 80.0 8	320. 0 1. 0 ND 30. 0 ND 2. 7 38. 0 48. 0 0. 8 7. 1 1. 6 ND 36. 0
VDLATILL LAGARILL.								
entorobendene localine eligorome mane	140 140 140 141	:0 :0	10 10	07 ::2	ND NO NG	ND ND NE	ND ND	ND ND O. 03
VOLATILE FRIORITI POLETIANT TOTAL	i£	:E	ИЗ	0.67	NE.	ND	1iD	0.03
FESTICISES:								
i overhiging		23.8	:5	::2	äΣ	ND	Ori	NĐ
BASE REGIRAL ORGANICS:								ા પત્તે ∵
finthracere Berzo (a) anthracere Berzo (b) Étouranthere Berzo (b) Étouranthere Berzo (d) Étouranthere Berzo (d) figuranthere is programment is programment is bachter concere is bachter concere is bachter concere is bachter concere is bachter concere is bachter concere in the concernment is bachter concere in the concere concere is the concernment is the	EL D		######################################		3.84 3.84 3.35 3.35 3.35 3.35 3.35 3.35 3.35 3.3	10 7 7 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.4 1991 - 1992 1992 - 1993 1992 1992	ND ND ND ND ND ND ND ND ND ND
bodisto ocur des. Foculari lone		ΝÜ	4.3	9.15	7.75	5.01	9.1	1.23
inoE/Millione Liblina deniich:								
c. corotorsene	58	8	183	53	ND	ND	29	1.7
EP Toxicity Comprises	144	iún	NA	NA	NA.	NA	NA.	•

ONLY PARAMETERS DETECTED IN AT LEAST ONE SAMPLE ARE SHOWN ABOVE.
ALL CONCENTRATIONS ARE IN PARTS PER MILLION Appl)
THE MOT DETECTED SINCE DETECTION LIMITS VARY,
SEE AMACTIEM, DATA CHEETS PROVIDED IN APPENDIX B.
THE CONCENTRATION.





Turner Place, P.O. Box 365 Piscataway, New Jersey 08854 (201) 981-5000

May 18, 1983

Dr. Richard Baker Permits Administration Branch U.S. EPA Region II 26 Federal Plaza New York, New York 10278

Ng DOO2/84562 Ng DO11246337

Dear Dr. Baker:

As requested by Mr. Frank Coolick, Chief, Bureau of Hazardous Waste Engineering Division of Waste Management of NJDEP, we are forwarding to you revised Part A Applications for Nuodex Inc.'s Fords and Elizabeth, New Jersey facilities. These chemical manufacturing plants were purchased by Nuodex from Tenneco Chemicals, Inc. on December 22, 1982, as mentioned in earlier communications with you. Also included in this package is the cover letter sent to Mr. Coolick in response to his request.

If additional information is required, please advise.

Very truly yours,

mario 2. Capini

Mario Q. Ceprini, Ph.D. Manager, Environmental Affairs

MQC/ec

Enclosures

cc: Mr. Frank Coolick, NJDEP

Please print or type in the unshaded areas only (fill—in areas are spaced for elite type, i.e., 12 char	Form Approved OMB No. 158-R0175
FORM U.S. ENVIRONMENTAL PROTECTION AGENCY	L EPA I.D. NUMBER
GENERAL INFORMATION Consolidated Permits Program (Read the "General Instructions" before starting.)	FNJD002184562
LABEL ITEMS L EPA I.D. NUMBER JIL PACILITY NAME PACILITY: PLEASE PLACE LABEL IN THIS SPACE	If a preprinted label has been provided, effix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent (the age: to the left of the label space lists the information that should appear), please provide at in-the
FACILITY	proper fill—in sree(s) below, if the label is complete and correct, you need not obmplete. Items I, III, V, and VI (except VI-B) which must be completed reperfless). Complete all items if no label has been provided. Refer to the instructions for detailed lam descriptions and for the legal authorizations under which this data is collected.
THE POLLUTANT CHARACTERISTICS NEW POLICY OF THE POLICY OF	The later of the l
questions you must submit this form and the supplemental form listed in the parenthesis following the	question: Mark "X" in the box in the third column
off) the supplemental form is entached. If you answer ≠no" to each question, you need not submit any of the excluded from permit requirements; see Section C of the instruction. See also, Section D of the instruction.	mese forms. You may enswer not it your activity ons for definitions of bold—feeed terms.
MARK Y SPECIFIC QUESTIONS SPECIFIC	C QUESTIONS MARK 'X
which results for a discharge for maters of the U.C.? X squarte animal product of the U.C.?	ity (either existing or proposed) d. animal feeding operation or stion facility which results in a X
Cole this a facility which currently results in discharges. D. Is this a proposed faci	the U.S.2 (FORM 2B)
A OF B abover (FORM 2CIP)	ich will result in a discharge to X
hazardous wastes (FORM 3) X X X paining, within one	iject at this facility industrial or a low the lowermost stratum conquerter; mile of the well bore. X of drinking water? (FORM 4)
in connection with conventional oil or natural gas pro- in connection with conventional oil or natural gas pro- duction unject fluids used, for anhanced recovery, of oil oil oil oil oil oil oil oil oil oil	ject at this facility fluids for soo- mining of sulfur by the Fresch ing of minerals, in situ combus- recovery of geothermal energy?
le this facility a proposed stationary source which is the facility a proposed stationary source which is the facility a proposed stationary source which is the facility a proposed stationary source which is facility a proposed stationary source which is facility and the facili	osed stationary source which is noustriel categories listed in the noustriel categories listed in the property of the classic listent aguitant regulated under the Classic
Clean Air Act and may affect to be located in at a stainment was / (FORM 5)	ct or be located in an attainment
FORDS PLANT NUODEX INC.	
TI I I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I I PO I	
A. NAME & TITLE (lost, first, & stile)	B. PHONE (area code & no.)
MAHON J. J. PLANT MANAGER 2	0.1 981 5680
V. FACILITY WAILING ADDRESS	and the second production of the second seco
A STREET OR P.O. SOX	
3 I. N. D. U. S. T. R. I. A. L. A. V. E. N. U. E.	
10 10 marin and a second and a	6.3
VE FACILITY LOCATION	
5 INDUSTRIAL AVENUE	18: [] 18: [] 17: [00]
E COUNTY NAME	1100 M
MIDDLESEX	
C.CITYOR TOWN	ODE F.COUNTY CODE
6 F.O.R.D.S. N.J O.8.8	6.3
EPA Form 3510-1 (6-80)	CONTINUE ON REVERSE

CONTINUED FROM THE FRONT		<u> </u>		
VIL SIC CODES (4-digit; in order of priority)				
A FIRST		G (specif)	B-SECOND	Carried States
2,8,6,9 INDUSTRIAL ORGANIC	CHEMICALS	274	"	
THIRDS		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	TOURTH C	CHAIN A H. CAM
(specify)		(specif)	y) .	
TO THE SECOND STATES		11 11 11 11 11 11		
WIEGPERATOR INFORMATION	The state of the s	A STATE OF THE PROPERTY AND ADDRESS.	The second second second	Buils the name listed
			7111111	Item VIII A siso
NUODEX INC.	<u> </u>			YES
Carrier of Germania (Crist in 1995)		(specify)	CI SI I	E (area code & so C
	P	Japeci)))	A 2 0 1	981 5000
TURNER PLACE PO) BUA 3.0.7	新华州市区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区区		
		CHAT WELL	code ix indiantan	
PISCATAWAY		и 1 0 8	8 5 4	etection Indian lends 35
	***		3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
MEXISTING ENVIRONMENTAGPERMITS	The state of the s	And the second s	And a first term of the first	
	The second secon	de from Proposité Sauces		
N.J.O.O.O.O.1.1.6.	NONE			
			(specify)	Control of the San and San and Control
NONE			•	•
3 N. J. D. O. O. 2. 1. 8. 4. 5. 6. 2	NONE		(specify)	
	SALES EL SUS EL SUS DE L'ANNE	THE STREET PROPERTY OF THE STREET, SALES	36	·
The month of the state of the s	nen of the specement	citizations one mile here	ord occupanty beamderies	The man must street
the outline of the lacuity, the locations	e each of its existing an	Lucoposed intake and dis	charge structures, each	of its hazardous waste.
restment. Arcrages be playonal facilities. Mater bothes in the map area. See institut	and each well where it	pjecas fluida undergroupd	Lineude ell springs m	ers and other surface
MENATURE OF BUSINESS Compact and a	は国は国際のとなる。日本のは、日本のは、日本のは、日本のは、日本のは、日本のは、日本のは、日本のは、			
· · · · · · · · · · · · · · · · · · ·	State of the state			
The Fords plant of Nuodex	inc., manufacture	s organic chemica	l intermediates	including
formaldehyde, organophosph	ites and specialt	y chemicals.		
				•
				•
			•	•
				**
, and the second second second second second second second second second second second second second second se			•	
	•	•		
KHE CERCIFICATION Des introctions				
Lice ut timber paralty of law that char	personally examined an	d and familiar with the int	ormation submitted In	tils application and air
accommence and that Dasad or misho	uice of those persons in	nmediately responsible to	containing the informa	tion contained in the
applications & believe that the information false informations including the possibility	ups over accurate and t	complete at are awares the	there are significant pe	naties for submitting
A. NAME & OFFICIAL TITLE (sype or print)		ATURE		C. DATE SIGNED
Joseph Fath, Vice Presiden	1	/ /	H	-//
	<u> </u>	July .	' \	110/83
COMMENTS FOR OFFICIAL USE ONLY				
d to the same			STATE OF THE STATE	A SPECIAL SECTION
2 Form 3510.1 (6.90)	NAME OF THE PROPERTY OF THE PR			
PA Form 3510-1 (6-80) REVERSE				

113

and the state of the state of the state of the state of the state of the state of the state of the state of the

. .

文が行うとより過程ではいるの数数ではなかであります。

an areas are spaced for elite typ	e, i.e., 12 char. (ch).		m Approved OMB No. 1	158-S80004
SEPA	HAZARDOUS WASTE PERN Consolidated Permits	IIT APPLICATION Program	I. EPA I.D. NUMBER	8 / 5 6 2 1
FOR OFFICIAL USE ONLY	(This information is required under S	ection 3005 of RCRA.		13 (14 (15
APPLICATION DATE RECEIVED APPROVED (yr., mo., & day)		COMMENTS	ing the charge and and all the	<u> 1946 — Paraderin Sk</u> Bora of Politiko of
23 24 25 25				
II. FIRST OR REVISED APPL	in A or B below (mark one hox only) to it	ndicate whether this is the first a	application you are submitting	for your facility or a
revised application. If this is your fi EPA I.D. Number in Item I above.	rst application and you already know you	r facility's EPA I.D. Number, or	if this is a revised application,	enter your facility's
EXISTING FACILITY	an "X" below and provide the appropriate See instructions for definition of "existing Complete item below.)			plete item below.) R NEW FACILITIES, OVIDE THE DATE
8 OPE	EXISTING FACILITIES, PROVIDE THE RATION BEGAN OR THE DATE CONST the bases to the left)	EDATE (yr., mo., & day) RUCTION COMMENCED	YR. MO. PAY (yr	, ma., & day) OPERA- ON BEGAN OR IS PECTED TO BEGIN
B. REVISED APPLICATION (place an "X" below and complete Item [a IN STATUS	bove)	2 PACILITY HAS A RC	RA PERMIT
III. PROCESSES — CODES AN	CAN A SECURE OF THE SECURE OF	and the second s	este e seta e esta este esta e esperante en la companya del companya de la companya de la companya del companya de la companya	
entering codes. If more lines are	de from the list of process codes below the needed, enter the code(s) in the space pro a design capacity) in the space provided or	wided. If a process will be used	be used at the facility. Ten li that is not included in the list	nes are provided for of codes below, then
B. PROCESS DESIGN CAPACITY	- For each code entered in column A ente			
1. AMOUNT — Enter the amount 2. UNIT OF MEASURE — For	nt; each amount entered in column B(1); ente cof measure that are listed below should b	r the code from the list of unit r	neasure codes below that desc	ribes the unit of
	PROSE APPROPRIATE UNITS OF CESS & MEASURE FOR PROCESS (1)			HATE UNITS OF
PROCESS PROCES	CODE DESIGN CAPACITY	PROCESS Treatment:	화장 사용하여 없었다. 아프 프로프 그 전에 하고 아프 그리고 그리고	N CAPACITY
CONTAINER (barrel drunt stc.)	502 GALLONS OR LITERS	TANK	LITERS PE	PER DAY OR R DAY PER DAY OR
WASTE PILE: SURFACE IMPOUNDMENT	# 503 CUBIC YARDS OF CUBIC METERS - 504 GALLONS OF LITERS	INCINERATOR	LITERS PE	RDAY
Disposal: INJECTION WELL	D79 GALLONS OR LITERS		GALLONS LITERS PE	PER HOUR OR THE
EANDFILL TO THE RESERVE TO THE RESER	DAG ACREFEET (the volume that would sover one foot) OR Septin of one foot) OR SHECT ARE-METER	OTHER (Use for physical, c thermal or biological treatm processes not occurring in the surface impoundments or in	anks,	
LAND APPLICATION OCEAN DISPOSAL (14)	DSI ACRES OF HECTARES DSZ GALLONS PER DAY OR LITERS PER DAY	ators. Describe the process the space provided; Item II	e in	
SURFACE IMPOUNDMENT	DAN GALLONS OR LITERS	UNITOF		UNIT OF
UNIT OF MEASURE	MEASURE	MEASURE CODE	UNIT OF MEASURE	MEASURE CODE
GALLONS.	G LITERS PER DAY TONS PER HOUR TONS PER HOUR TONS PER HOUR		ACRE-FEET.	A
GALLONS PER DAY	LITERS PER HOU	Restriction of the state of	THE STATE OF THE S	
	EM III <i>lahown in line numbers X:1. and X</i> illity also has an incinerator that can burn		orage tanks, one tank can hold	200 gallons and the
C Dur		1-	11:1-1-1-1	
B. PROCESS	DESIGN CAPACITY FOR	P. L. A. PRO-	OCESS DESIGN CAPACI	FOR
CEBS CODE CODE Code Code Code Code Code Code Code Code	OUNT SURE USE	CODE		OF MEA- SURE (enter ONLY
et a same of same text of every behavior of the	State of the secretary track of the least of the secretary and the secretary	above)		code) 20 32
X-1 S 0 2 == := 600				
X-2T 0 3		6	· · · · · · · · · · · · · · · · · · ·	
1 S 0 1 38,500) G			
2 T 0 1 1,000,00	00 0	8		
3		9		
4 10 10 10 -	27 23 29	10	27	26 29 - 32

-	7	~~~~	TO /	ntinued	٠.
			HN 100	M TINILON	

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

IV. DESCRIPTION OF HAZARDOUS WASTES

- A EPA HAZARDOUS WASTE NUMBER Enter the four-digit number from 40 CFR, Subpert D for each listed hazardous waste you will handle. If you handle hazardous westes which are not listed in 40 CFR, Subpert D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characterisastes. tics and/or the toxic contaminants of those hazardous wastes.
- B_ESTIMATED ANNUAL QUANTITY For each listed wests entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminent entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled. Which possess that characteristic or contaminant.
- UNIT OF MEASURE For each quantity entered in column 8 enter the unit of measure code. Units of measure which must be used and the appropriate coder are:

 ENGLISH UNIT OF MEASURE CODE METRIC UNIT OF MEASURE

	Eñ	G	L	SH	Ü	NI	T	ΟĬ	ì	ÌΕ	À	SL	İΒ	ιË		3		4				Ÿ	1	ij	Ċ	ď	C	Ē	Ē	1	,	e.		1	1	N	Œ	1	Ē	ı	C	U	Ń	Ħ		2	•	V	1	S	U	31		'n	3	Š	3		Ť	7	-	46	C	Qį	QΕ	Ú.	
	×	W	NC	3	17	de.	3	3		1		, id	3	2	4	3			4.79		3						P	Į,					÷			K		Ľ	0	G	R	A	M	5		å.	Σ,							10					7				4	ĸ		13	•
	TC	***	2		1		4	-/	- 4	3		a j	4	SI.	2	4	26	Á,		Ŀ			4	ž,	×		ď			2	4	4		÷		N	ú	ď	'n	Ė	c	T	0	N	z.		S.		÷	٥.			i.	1,1	77		1	1		131	2	Ē.	ŝ.	M	1.2	. 15	٠

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

.

并多為門養養養

聖者特殊 等等不過 医病者者及者不可以方法

- 1. PROCESS CODES:
 For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III. to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code/s/ from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes, if more are needed: (1) Enter the first three as described above; (2) Enter "900" in the extreme right box of Isam IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

PROCESS DESCRIPTION: It's code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- 1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

 2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter
 - included with above" and make no other entries on that line:
 - 3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

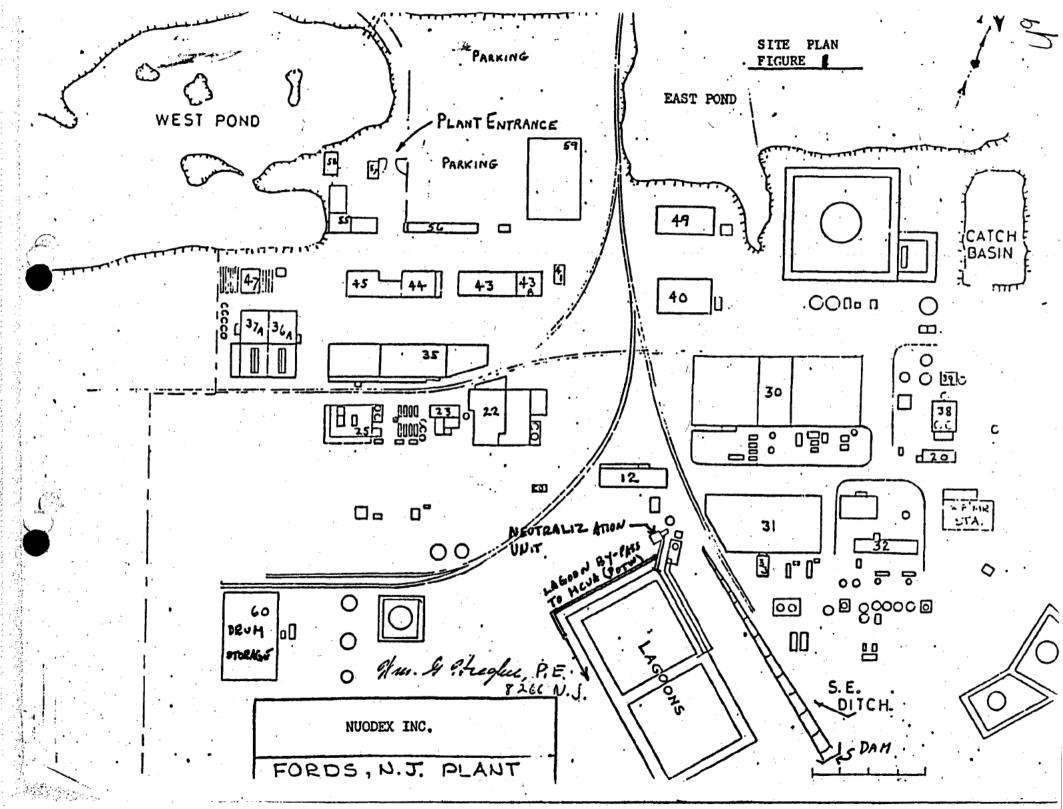
EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1; X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

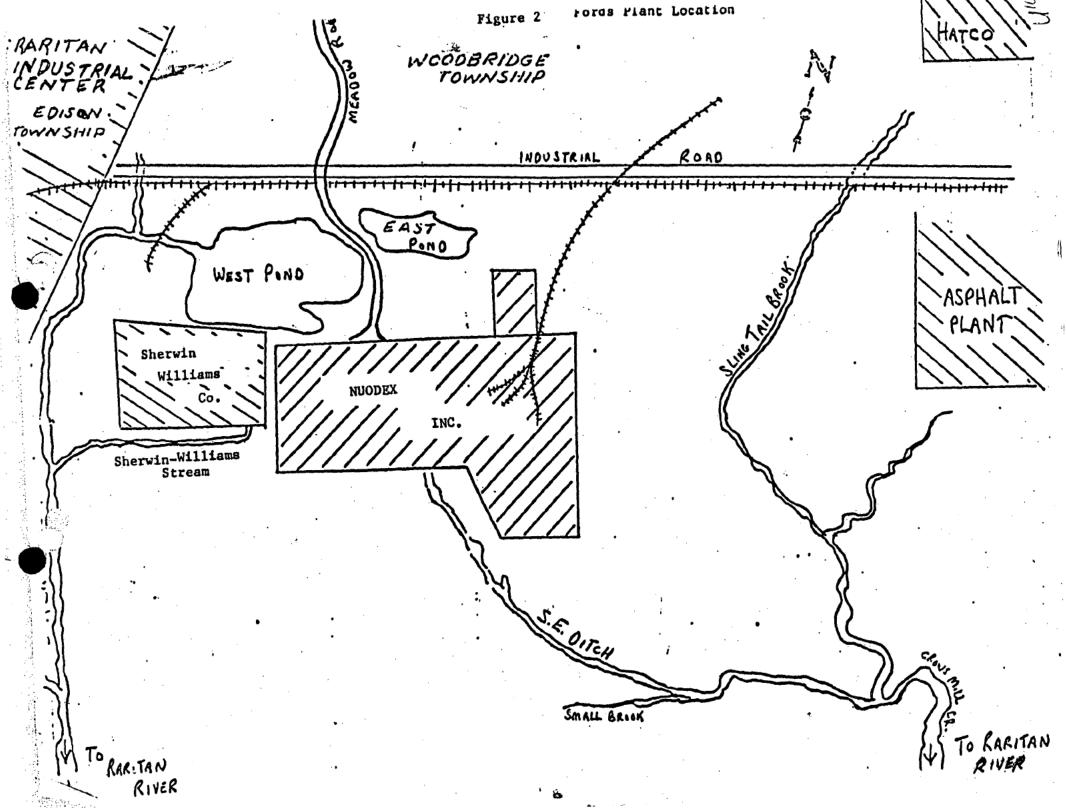
LINE NO.	IH	ΑZ	EP/ AR FE N	D.	B. ESTIMATED ANNUAL QUANTITY OF WASTE	OF	UN UR ente	EA-		推行 (2)	1	12 m			s codes er)	artije latie	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K	0	5	4	900		P		T	0	3	D	8 0	7			
X-2	D	0	0	2	400	15. 14. 4.	P		T	o	3	D'	8 0	,			
X-3	D	0	0	1	100		P	10.00	T	o	3	D	8 0	7			
X-4	D	0	0	2							1.						included with above

11	-	EPA	1.0). N	UM	BER (enter from page I)	\		Y	S Caled	s : 53) 28	1.4		IAL USE	ONLY TAG
HALEPAD POSTIMATED ANNUAL SUMMY STREET FOOLS STREET FOOL	1 2	J	12	Ť	0	1) 14 [1]	۱ -	\ \ \	7	1 2			D U P	and statement	13 14 13 23 - 26
Total Control	A. EPA TO THE PROCESSES TO THE PROCESSES TO THE PROCESSES TO THE PROCESSES TO THE PARTY OF THE P						D. PROCESSES								
	NO.	W	131	EI	40			SURE (enter code)				<u> </u>			2. PROCESS DESCRIPTION (if a code is not entered in D(1))
2 U 1 5 4 10,000 P S 0 1 T 0 1 3 U 1 9 0 1,000 P S 0 1 T 0 1 4 U 1 2 2 30,000 P S 0 1 T 0 1 5 D 0 0 2 2,000,000 P S 0 1 T 0 1 6 D 0 0 1 45,000 P S 0 1 7 U 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	U	0	5	2	200		H		-1-1	1	-	A7 - A9	37 - 18°	/
3 U 1 9 0 1,000 P S 0 1 T 0 1 U 1 2 2 30,000 P S 0 1 T 0 1 D 0 0 2 2,000,000 P S 0 1 A 5,000 P S 0 1 A 6 D 0 0 1 45,000 P S 0 1 A 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	IJ	1	5	4			P		S 0 1	T () 1			
1 U 1 2 2 30,000 P S 0 1 T 0 1 5 D 0 0 2 2,000,000 P T 0 1 7 I I I I I I I I I I I I I I I I I I	3	U	1		П		, Y	P		S 0 1	T) 1			
5 D O O 2 2,000,000 P T O 1		U	1	2	2			P		S 0 1	T) 1	11	,-,-	
6 D O O D A 45, 000 P S O I A 50 D D D D D D D D D D D D D D D D D D	5	D			П					7 1		1	1 1		
7					П		4 4 4 5	S		11	Г	1	1 1		
10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 20. 21. 22. 23. 24. 25. 26. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	7				П			20 20	1	· ·				-	
10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 20. 21. 22. 23. 24. 25. 26. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	8							(3) (3)		•			7 .		
100 111 12 13 14 15 16 17 18 19 20 21 21 22 23 24 25 26	9,						遊		30	1		- V.	47.	118.91	
11	10.						1.50		6.36	7.7			26.)		
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	11									1			•		
13	12		-	-				3.00	7	7	. Pa				
14	13					· · · · · · · · · · · · · · · · · · ·		2	3	77			1 1		
16	17.7						4.7	(4)		111	1				
19 20 · 21 21 22 23 24 25 26	15							a a series		1.1.	-		7-1	· · · · ·	;
17 18 19 20 21 22 23 24 25 26	16					-		183 186 173			7		7.7		
18 20 21 22 23 24 25 26	17								-	-1-1-	-	1			
20 · 21	18							1	Ġ.	17	-		-	- 1 - 1	
20 ·	(Vental)						,5	10000				1	• •	ı	
21		•					1	75	1	тт-	1		1 1	- 1	
22 23 24 25 26	21									-	-		1-1	- 1	
23	22							187 C		1 1		1	1 1		• 1
24	23							3		17		_			9,
25 26	24												1 1	7 7	
26	25				1	· · · · · · · · · · · · · · · · · · ·	٠.			11	i	1	1-1	11	
		23				27 - 38		20	1		_	T	.1 1		

EPA Form 3510-3 (6-80)

Continued from the front,	· ·				
IV. DESCRIPTION OF HAZARDOUS WASTE	S (continued)				0 × 4.
E. USE THIS SPACE TO LIST ADDITIONAL	PROCESS CODES	FROM ITEM D(1)	ON PAGE 3.	•	•
					•
. •					
					1
	• .				N i
·	-				Ţ
		·		r	- /:
				•	•
				V.	
			•	•	-
				, ,	
		-		2	•
					•
EPA ID: NO. lenter from page 1)					
ENTRO O 2 1 8 / 5 6 2 5 6					
V PACILITY DRAWING All existing facilities must include in the space provide	ded on page 5 a scale d	rawing of the facility	(see instructions for mo	re detail).	ere görlesm ille
EVI. PHOTOGRAPHS					
All existing facilities must include photograph treatment and disposal areas, and sites of future	s (aerial or ground— re storage -treatmen	<i>level)</i> that clearly (delineate all existing s (see instructions for r	structures; existing nore detail).	storage,
VIE FACILITY GEOGRAPHIC LOCATION		alogotal alogo			
LATITUDE (degrees, minutes; 8 a	econds)	ing statements	LONGITUDE (degre	es, minutes, & second	
4 0 3 1 2	o	44 (25.44)	274	- امادا اولی	
VIII.FACILITY OWNER	A Proposition of the Control of the	armen, same a series and		75 74 }77 - 70	
A. If the facility owner is also the facility opera	norse listed in Section	VIII on Form 1, "Ge	neral Information", pla	e an "X" in the box	to the left and
Author Section 1/2 miles					
B. If the facility owner is not the facility operat	的 种种性的人。		plete the following item		The second of the
T.NAME OF	PACILITY'S LEGAL	OWNER		2. PHONE NO	(area code & no.)
	e a sotiente de la composition de la composition de la composition de la composition de la composition de la c	and the first of the control of the	My Franklin wells in a 1 th fire	10 10 10 10	
S. STREET OF P.O. BOX	E C	∰ y 4. CITY OR	TOWN	8. ST. 6.	ZIP CODE
F	G				
EX. OWNER CERTIFICATION	W #8 6 1997, 1289 18 L 18 13	*	48	41 42 147	
Acertify under penalty of law that I have person					
documents, and that based on my inquiry of the submitted information is true, accurate, and co					
including the possibility of fine and imprisonm	nent. 4 - 1 - 1 - 1	-/-	\sim		
A. NAME (print or type)	B. SIGNATU	RE / /- //		C. DATE SIGNED	•
Joseph Fath		but chill	,	5/16/8	3
X, OPERATOR CERTIFICATION					
I certify under penalty of law that I have person documents, and that based on my inquiry of the submitted information is true, accurate, and co including the possibility of fine and imprisonment	hose individuals imm omplete, I am aware	nediately responsib	le for obtaining the i	information, I belie	ve that the
A. NAME (print or type)	8. SIGNATU	KE Series de la series		C. DATE SIGNED	<u> </u>
	•				
EPA Form 3510-3 (6-80)					TINUE ON PAGE 5





New Jersey Department of Environmental Protection

Air Pollution Permits

518				CT	29696
519				CT	29697
520				CT	29698
1442				CT	29699
1901		-		CT	29700
3151				CT	29701
3155	-		,	CT	29702
3156				CT	29703
5411				CT	29704
5412	•			CT	29705
5413		. :		CT	29706
5414				CT	29707
5415	•			CT	29708
7304		*		CT	29713
7305				CT	29983
7387 .				. CT	33101
				CT	34370
12652	-				34371
				CT	34372
				·CT	34373
					34374
			•		34375
					34376
~					37820
					37821
		•			45583
29695				C1	45665
	518 519 520 1442 1901 3151 3155 3156 5411 5412 5413 5414 5415 7304 7305 7387 8778 12652 12653 19099 19102 22614 25195 29692 29693 29694 29695	519 520 1442 1901 3151 3155 3156 5411 5412 5413 5414 5415 7304 7305 7387 8778 12652 12653 19099 19102 22614 25195 29692 29693 29694	519 520 1442 1901 3151 3155 3156 5411 5412 5413 5414 5415 7304 7305 7387 8778 12652 12653 19099 19102 22614 25195 29692 29693 29694	519 520 1442 1901 3151 3155 3156 5411 5412 5413 5414 5415 7304 7305 7387 8778 12652 12653 19099 19102 22614 25195 29692 29693	519 CT 520 CT 1442 CT 1901 CT 3151 CT 3155 CT 3156 CT 5411 CT 5412 CT 5413 CT 5414 CT 5415 CT 7304 CT 7305 CT 8778 CT 12652 CT 12653 CT 19099 CT 19102 CT 22614 CT 25195 CT 29692 CT 29693 CT 29694 CT

 $(1^{\prime\prime}$

FORDS

PROCESS DESIGN CAPACITY

MAY 23 S 19 TH HO HOUTON HEAT TOWN

S01

38,500 gal

700 55-gal drums stored

T01

1,000,000 gal/day

Neutralization tank

CHARACTERISTICS OF HAZARDOUS WASTE

U052	200 lbs	Ortho Cresol - Occassional spill clean up or waste to treatment facility.
U154	10,000 lbs	Methanol - Occassional spill clean up or waste to treatment facility.
U19 0	1,000 lbs	Phthalic Anhydride - Occassional spill clear up or waste to treatment facility.
U122	30,000 lbs	Formaldehyde - Occassional spill clean up; Approximately 100 pounds/day to treatment from formic exchanger.
D002	2,000,000 lbs	HCl - Waste acid from K-18 to treatment facility.
D001	12,000 lbs	Waste Fuel Oil - Waste Methanol, etc Estimate 30 drums/year.